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Stability of Parts-Per-Billion Hazardous Organic Cylinder Gases and Performance Audit Results of Source Test and Ambient Air Measurement Systems. Status Report 5

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STATUS REPORT 5
STABILITY OF PARTS-PER-BILLION HAZARDOUS ORGANIC CYLINDER GASES AND PERFORMANCE AUDIT RESULTS OF SOURCE TEST AND AMBIENT AIR MEASUREMENT SYSTEMS

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16. ABSTRACT

An evaluation of 29 gaseous organic compounds at PPB levels in compressed gas cylinders was conducted by the U.S.Environmental Protection Agency (EPA). Primary objectives of this on-going project are to 1) evaluate the quality of measurements made by EPA, state/local agencies or their contractors by using ppb gas cylinders for performance audits to assess relative accuracy of source measurement systems during hazardous waste trial burn tests and ambient air monitoring programs; 2) verify the manufacturer's certified analysis of the multi-component gas mixtures; 3) determine stability of gas mixtures with time; and 4) develop new audit materials as requested by EPA. Cylinders consist of 5 mixtures of 5, 6, 7, 9, and 18 organic compounds each. These mixtures were blended by a commercial gas supplier in aluminum cylinders in a balance gas of nitrogen. The 5-component mixture (Group I) contains carbon tetrachloride, chloroform, perchloroethylene, vinyl chloride and benzene. The 9-component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorofluoromethane (F-12), bromomethane, methyl ethyl ketone and 1,1,1-trichloroethane. The 7-component mixture (Group III) includes vinylidene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The 6-component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide and o-xylene. The 18-component mixture (Group V) includes compounds from Groups I thru IV. To date, 268 performance audits have been initiated and 249 completed. Results of these audits and description of experimental procedures used for analyses and available stability data are in Status Report #5.

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FOREWORD

Source measurement and monitoring efforts are designed to anticipate potential environmental problems, to support regulatory actions by developing data bases needed in developing regulations and to provide means of monitoring compliance with regulations. The Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, North Carolina, has the responsibility for implementation of Agency-wide Quality Assurance programs for air pollution measurement systems; and supplying technical support to other groups in the Agency including the Office of Solid Waste, the Office of Air and Radiation, the Office of Toxic Substances, and the Office of Enforcement.

The need for reliable standards for auditing and documenting the accuracy of source emission measurement of organic hazardous pollutants is well established. The Quality Assurance Division of EPA's Atmospheric Research and Exposure Assessment Laboratory has responded to this need through the development of compressed gas cylinders containing gaseous organic compounds in parts-per-billion (ppb) levels. The primary objectives of this on-going project are (1) to evaluate the quality of measurements made by Federal, state/local agencies, or their contractors, by using ppb gas cylinders for performance audits during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analysis of the multi-component gas mixtures; (3) to determine the stability of the gas mixtures with time; and (4) to develop new audit materials as requested by EPA. This report describes the current status of this project. Included in the report are (1) a description of the experimental procedures used for the analyses of multi-component ppb level gas mixtures; (2) a description of the audit procedure; and (3) currently available audit results and stability data.

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ABSTRACT

The U.S. Environmental Protection Agency (USEPA) has evaluated the suitability of 29 gaseous organic compounds at parts-per-billion (ppb) levels in compressed gas cylinders for use as audit materials during hazardous waste trial burn tests and ambient air measurements. The primary objectives of this on-going project are: (1) to evaluate the quality of measurements made by USEPA, state/local agencies, or their contractors by using ppb gas cylinders for performance audits during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analyses of the multicomponent gas mixtures; (3) to determine the stability of the gas mixtures with time; and (4) to develop new audit materials as requested by USEPA.

The cylinders consist of five mixtures of five, six, eight, nine, and eighteen organic compounds each. These mixtures were blended by a commercial gas supplier in aluminum cylinders in a balance gas of nitrogen. The five-component mixture (Group I) contains carbon tetrachloride, chloroform, tetrachloroethylene (perchloroethylene), vinyl chloride and benzene. The nine-component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane (ethylene dichloride), 1,2-dibromoethane (ethylene dibromide), acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane (methyl bromide), methyl ethyl ketone and 1,1,1-trichloroethane. The eight-component mixture (Group III) includes pyridine*, vinylidene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The six-component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and o-xylene. The eighteen-component mixture (Group V) includes vinyl chloride, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), methylene chloride, chloroform, 1,2-dichloroethane, 1,1,1-trichloroethane, benzene, carbon tetrachloride, 1,2-dichloropropane, trichloroethylene, toluene, 1,2-dibromoethane, tetrachloroethylene, chlorobenzene, ethylbenzene, and o-xylene. To date 268 performance audits have been initiated and 249 are complete. The results of these audits and a description of the experimental procedures used for analyses and available stability data are presented in this status report. Generally, the results of the audits show reasonable agreement (plus or minus 50 percent) with the audit material concentrations measured by Research Triangle Institute (RTI), considering the low concentrations of the organics and the anticipated uncertainty associated with independent analyses conducted by an audit laboratory.

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*Although Group III cylinders contain pyridine, the concentrations are not certified due to severe analytical difficulties.

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Quality assurance of the concentrations of the organics in Groups I - V is provided by EPA auditing of the audit laboratory (RTI) using NBS-traceable standards for these Groups prepared by NBS under an EPA-NBS Interagency Agreement, and by the subsequent use of the NBS-traceable standards to assign the concentrations in the cylinders obtained from the commercial gas supplier that are used in this audit program. The NBS-traceable standards also are used by RTI to ensure quality control in reanalyses conducted over time to verify the long-term stability of the audit cylinders. Further, the NBS standards are periodically reanalyzed by NBS at the request of EPA to verify their continued stability and to assure the long-term quality of the measurement data.

Stability studies for all Group I, Group II, Group III, Group IV and Group V compounds have been performed. Results have established that all the compounds tested are suitably stable for use as reliable audit materials except ethylene oxide and propylene oxide at low concentrations.

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SECTION 1
INTRODUCTION

OBJECTIVES

The application of Quality Assurance practices is important to the generation of high-quality environmental data. The Quality Assurance Division of USEPA's Atmospheric Research and Exposure Assessment Laboratory has initiated a program to supply audit materials for use during hazardous waste trial burn tests and ambient air measurements. RTI, under contract with USEPA, has responded to this need through development of cylinder gases containing 29 gaseous organic compounds at ppb levels. The main objectives of this project are: (1) to evaluate the quality of measurements made by Federal, state/local agencies, or their contractors, by using ppb gas cylinders for performance audits to assess the relative accuracy of source measurement systems during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analysis of the multi-component gas mixtures; (3) to determine the stability of the gas mixtures over time; and (4) to develop new audit materials as requested by USEPA.

This report describes the current status of the project. Included in the report are: (1) a description of the experimental procedures used for the analyses of multi-component ppb level gas mixtures; (2) a description of the audit procedure; and (3) currently available audit results and stability data.

AUDIT MATERIALS CURRENTLY AVAILABLE

Currently, 29 gaseous compounds selected on the basis of the anticipated needs of USEPA's Office of Solid Waste and Office of Air Quality Planning and Standards have been investigated for suitability as audit materials. Table 1 lists the 29 organic compounds, the concentration ranges, and the number of cylinders for each group currently available in the ppb level cylinder gases. Group I cylinders each contain five (5) compounds; Group II cylinders each contain nine (9) compounds; Group III cylinders each contain eight (8) compounds; Group IV cylinders each contain six (6) compounds; and Group V cylinders each contain eighteen (18) compounds. The audit cylinders fall into three concentration ranges, depending upon the group to which the cylinder belongs. Each compound in the low concentration range is between 7 and 90 ppb and in the intermediate concentration range is between 90 and 430 ppb. In addition, Group I and Group IV cylinders are available in a high concentration range between 430 and 10,000 ppb. The Group V cylinders are available in the concentration range between 1-40 ppb. The balance gas for all gas mixtures is nitrogen, except three cyclinders in air (Group I, Group III, and Group V at low concentration) and the cylinder construction material is aluminum.

Table 1. PPB Level Organic Gases Currently Available

Group	No. of cylinders	Concentration range of each compound (ppb)
Group I*	26	7-90
	11	90-430
	12	430-10,000
Group II**	12	7-90
	6	90-430
Group III***	14	7-90
	3	90-430
Group IV****	12	7-90
	6	430-10,000
Group V*****	11	1-40

*Group I Compounds: Carbon tetrachloride, chloroform, tetrachloroethylene, benzene, and vinyl chloride.

**Group II Compounds: Trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane, methyl ethyl ketone, and 1,1,1-trichloroethane.

***Group III Compounds: Pyridine(1), vinylidene chloride, 1,1,2-trichloro-1,2,2,-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene.

(1) Pyridine concentrations are not certified due to analytical problems.

****Group IV Compounds: Acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and o-xylene.

*****Group V Compounds: Vinyl chloride, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), methylene chloride, chloroform, 1,2-dichloroethane, 1,1,1-trichloroethane, benzene, carbon tetrachloride, 1,2-dichloropropane, trichloroethylene, toluene, 1,2-dibromoethane, tetrachloroethylene, chlorobenzene, ethylbenzene, and o-xylene.

SECTION 2
EXPERIMENTAL PROCEDURES

Accurate analyses of the cylinder gases are required (1) to verify the concentrations reported by the specialty gas company which prepared the gas mixtures, and (2) to assess the long-term stability of the concentrations of the compounds.

INSTRUMENTATION

Analyses of Group I, II and III mixtures were performed prior to 1987 using a Hewlett-Packard 5880A gas chromatograph equipped with flame ionization and electron capture detectors. The electron capture detector (ECD) was used principally for measurement of all the halogenated hydrocarbons except vinyl chloride. The flame ionization detector (FID) was used for the analysis of vinyl chloride, benzene, methyl ethyl ketone, acetonitrile, all Group III compounds, and all of the Group I compounds in the high concentration range cylinders. The gaseous samples were injected onto the gas chromatographic column by means of two Valco six-port gas sampling valves mounted near the injection port. One valve was equipped with interchangeable sampling loops (1 cc and 3 cc) to allow the injection of different volumes of the gas mixtures. A schematic of the gas chromatographic system is shown in Figure 1. A schematic of the system previously used for generation of calibration standards using permeation tubes is shown in Figure 2. The gas chromatographic parameters used prior to 1987 in the measurement of individual compounds in Group I, Group II and Group III are listed in Table 2.

In 1987, a new method was developed for the analysis of all the ppb level cylinder gases. This method employs automated cryogenic preconcentration with cryofocusing and both flame ionization and electron capture detection. Analyses of Group I, II, III, IV, and V mixtures are now performed using a Nutech automated cryotrapping apparatus configured to a Hewlett-Packard 5880A gas chromatograph equipped with a flame ionization detector (FID) and electron capture detector (ECD). A schematic of the gas chromatographic system is shown in Figure 3.

System components include a nine-port multiposition valve that is electrically actuated for selecting the appropriate cylinder for analysis, cylinder gas pressure and mass flow control devices, a Nutech cyrogenic trapping unit, a personal computer with monochrome monitor, a Hewlett-Packard 5880A gas chromatograph with both flame ionization and electron capture detectors, and GC peak data processing with the 5880A Level 4 terminal and an HP 3393A computing integrator.

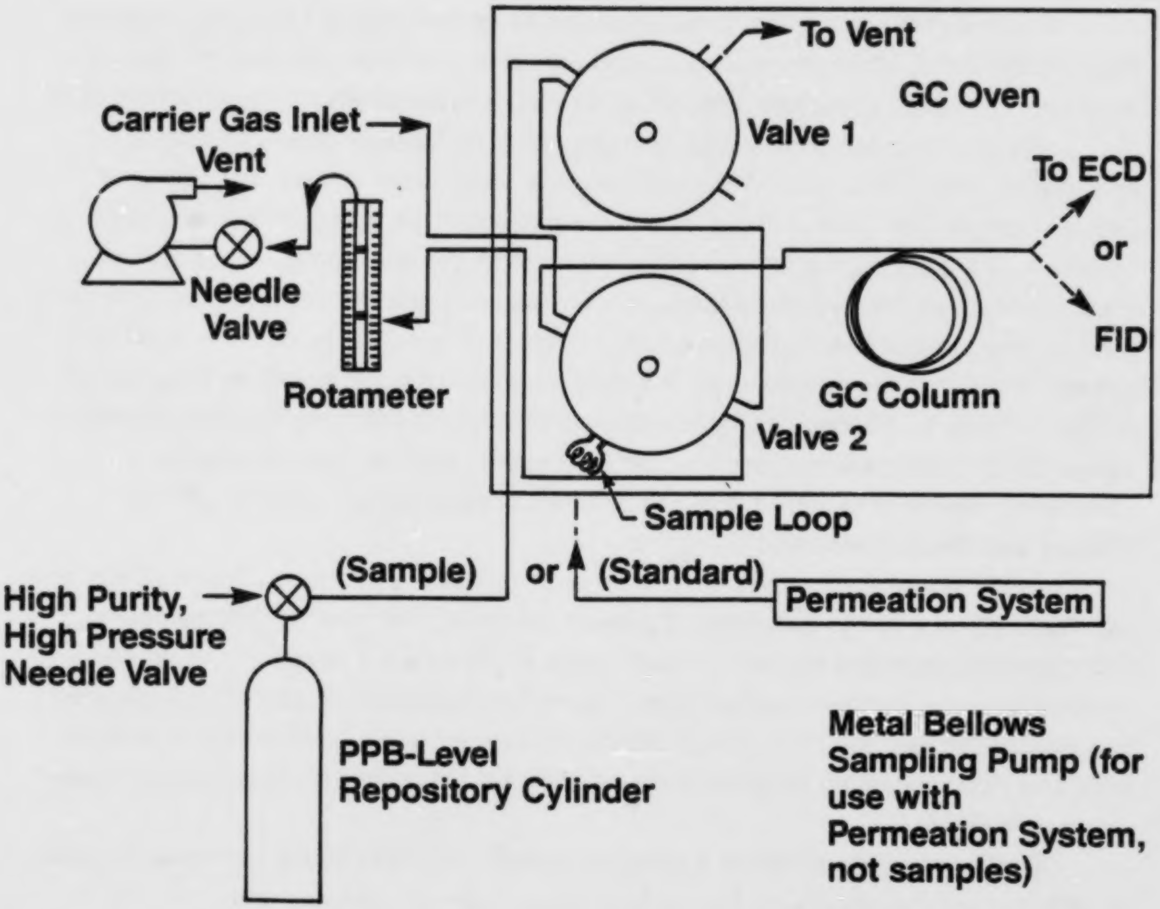

To Vent
GC Oven
Carrier Gas Inlet
Vent
Valve 1
To ECD
or
FID
Needle Valve
Rotameter
GC Column
Valve 2
Sample Loop
(Sample)
or
(Standard)
Permeation System
High Purity, High Pressure Needle Valve
PPB-Level Repository Cylinder
Metal Bellows Sampling Pump (for use with Permeation System, not samples)

Figure 1. Schematic of the gas chromatography system.

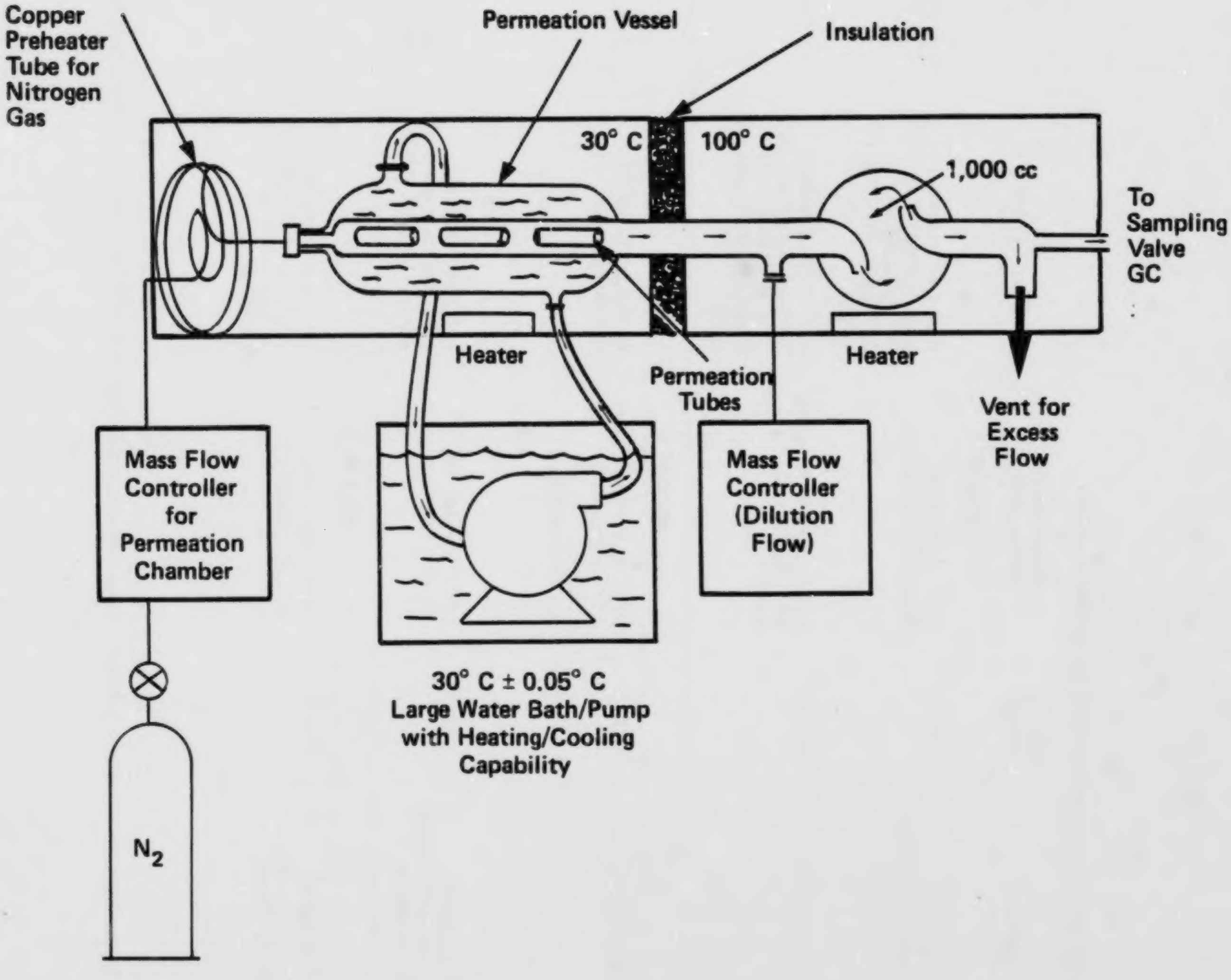

Copper Preheater Tube for Nitrogen Gas
Permeation Vessel
Insulation
30° C
100° C
1,000 cc
To Sampling Valve GC
Heater
Permeation Tubes
Heater
Vent for Excess Flow
Mass Flow Controller for Permeation Chamber
Mass Flow Controller (Dilution Flow)
30° C ± 0.05° C Large Water Bath/Pump with Heating/Cooling Capability
N2

Figure 2. Schematic of the permeation system.

Table 2. GC Conditions for Analysis of PPB-Level Cylinder Gases Before 1987

Compounds	Detector	Injector temp.	Column temp./ carrier gas	Column type	Comments
			GROUP I		
Vinyl chloride Benzene	FID at 200°C 35 cc/min hydrogen 500 cc/min air	100°C	80°C, Isothermal/ nitrogen at 55 cc/min	10 ft. x 1/8'' stainless steel column packed with 20% SP 2100 w/0.1% Carbowax 1500, 100/120 mesh	3.0 cc aluminum sample loop used
Chloroform Carbon tetrachloride Perchloroethylene	*ECD at 330°C	100°C	100°C, Isothermal/argon w/5% methane; at 40 cc/min	10 ft. x 1/8'' stainless steel column packed with 20% SP 2100 w/0.1% Carbowax 1500, 100/120 mesh	1.0 cc sample loop used
			GROUP II		
Freon 12 Freon 11 Bromomethane Trichloroethylene 1,2-Dibromoethane 1,2-Dichloroethane 1,1,1-Trichloroethane	ECD at 330°C	100°C	80°C, Isothermal/argon w/5% methane at 2 cc/min 30 cc/min make-up	60 m x 0.32 mm DB-1 capillary column	1.0 cc sample loop used
Acetonitrile and Methyl ethyl ketone	FID at 200°C 35 cc/min hydrogen 500 cc/min air	100°C	170°C, Isothermal/ nitrogen at 35 cc/min	6 ft. x 1/8'' stainless steel column packed with Porapak Q, 60/80 mesh	3.0 cc aluminum sample loop used; conditioned the column 1 day
			GROUP III		
Freon 114 Freon 113 Vinylidiene Chloride Acetone Toluene 1,4-Dioxane Chlorobenzene	FID at 200°C 35 cc/min hydrogen 500 cc/min air	150°C	120°C, Isothermal/ nitrogen 40 cc/min	20 ft. x 1/8'' stainless steel column packed with 10% SP-1000, 80/100 Supelcoport	3.0 cc aluminum sample loop used

*The ECD was necessary only for low concentration level cylinders. For intermediate and high level cylinders, FID at the stated conditions was used.

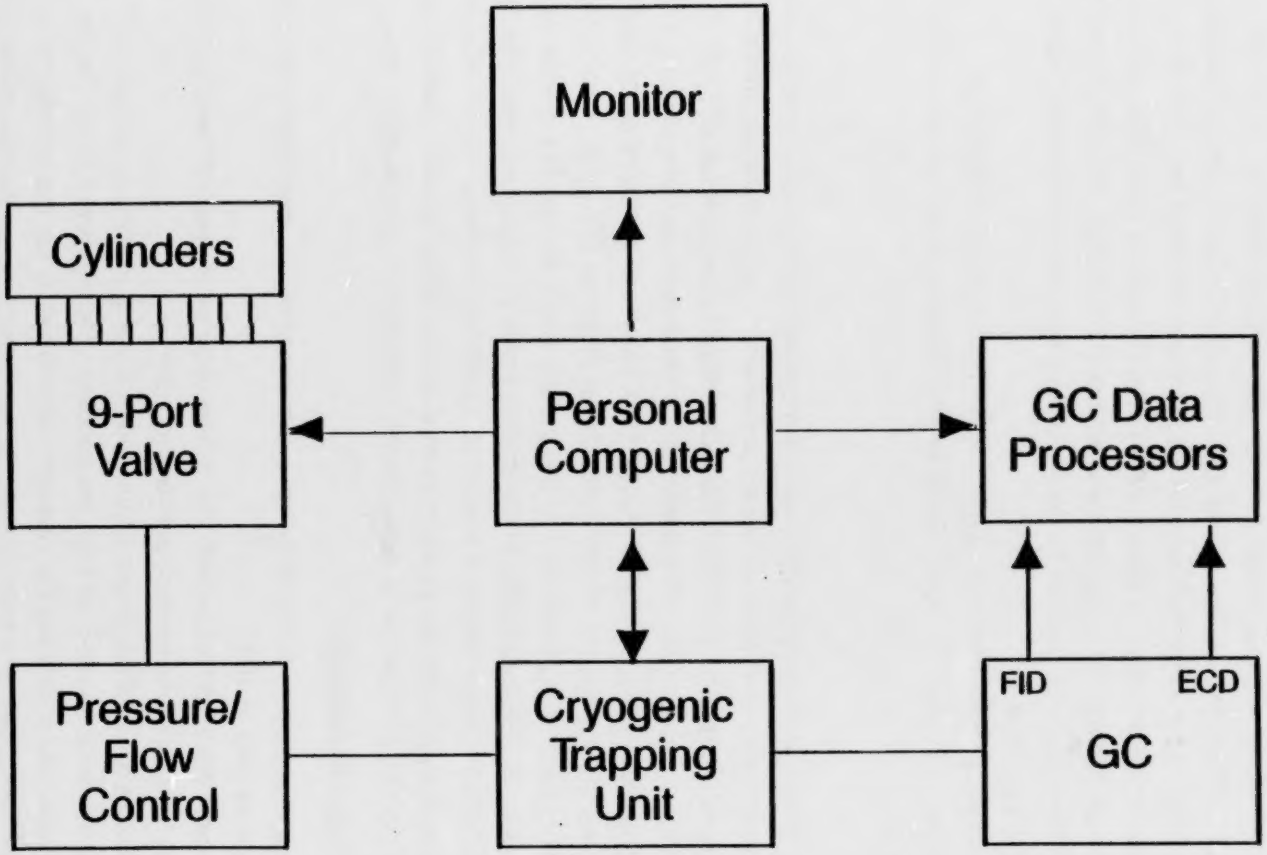

Monitor
Cylinders
9-Port Valve
Personal Computer
GC Data Processors
Pressure/ Flow Control
Cryogenic Trapping Unit
FID
ECD
GC

Figure 3. Automated cylinder analysis system.

Up to eight cylinders can be connected to the system for automated analysis. Typically the eight cylinders consist of an NBS quality control standard, a nitrogen cylinder for purging, and six audit cylinders to be analyzed. Each cylinder is connected to the nine-port valve with a CGA-350 fitting, a flow snubber, a check valve, and a length of 1/16 in. OD stainless steel tubing. The flow snubber serves as a safety device to prevent rapid decompression of the cylinder in the event of a break in the plumbing downstream. The check valve prevents cross-flow from other cylinders during multiport valve switching or cross-port leakage in the nine-port valve. The nine-port valve actuator is computer-controlled, and the valve position can be selected at random by inputting the valve position in binary-coded decimal format to the actuator.

The gas chromatographic parameters used in the measurement of individual compounds in Group I, Group II, Group III, Group IV and Group V using this new method are listed in Table 2A.

CALIBRATION

Calibration of the gas chromatograph involves measurement of known concentrations of organic gases in nitrogen. A custom-designed permeation system which produces known concentrations of organics in nitrogen had been used for all previous analyses of Group I and II cylinders prior to 1987. The details of the calibrations performed using permeation tubes are described previously (3). Currently, NBS-traceable standards developed and characterized by the National Bureau of Standards (NBS) under an EPA-NBS Interagency Agreement are being used for calibration for all five groups and a similar NBS standard cylinder mixture is used for Quality Control for all the analyses with the cryogenic preconcentration system. One NBS-traceable standard is used as a calibration cylinder before analysis of a set of cylinders from a particular group and a second similar NBS-traceable standard is used as a Quality Control cylinder that is subsequently analyzed on each analysis day.

SAMPLE ANALYSIS PROCEDURE

Figures 1 and 2 depict the entire analytical system used for the calibration and analysis of the gas mixtures prior to 1987.

Figure 3 depicts the analytical system that is now used for analysis of the gas mixtures by automated cryogenic preconcentration with cryofocusing.

After all cylinders for an analysis are connected, a purging procedure is used to ensure removal of any residual room air from the connecting fittings and tubing. This is accomplished by manually advancing the nine-port valve to select the first cylinder for purging. The main cylinder valve is then opened momentarily to pressurize the connecting fittings and tubing. A three-way valve located after the multiport valve is switched to vent to

Table 2A. GC Conditions for Analysis of PPB-Level Cylinder Gases by Automated Cryogenic Preconcentration*

Groups	Detector	Injector temp.	Temp. program/ carrier gas	Column type	Comments
I, II, III, IV, and V	FID at 275°C 30 cc/min hydrogen 360 cc/min air	100°C	35°C for 4 min 6°C/min to 90°C 15°C/min to 170°C Helium at 2 cc/min	Chrompack WCOT fused silica 50 m x 0.32 mm ID. CP-SIL-5 CB coating	1.5 cc stainless steel loop used. 100 mL of sample concentrated.

*Analyses described in Table 2 were discontinued during 1987 for Groups I, II, and III. The cryogenic system described here is used now for the analyses of Groups I, II, III, IV, and V.

depressurize the system to ambient pressure. This process of pressurization/venting is repeated three additional times. The nine-port valve is then advanced to select the next cylinder, and the process is repeated until all cylinder connections have been purged.

When not in the vent position, the outlet of the three-way valve passes to a single stage high-purity regulator that is set at 30 psig outlet pressure to provide the appropriate inlet pressure to a mass flow controller. The mass flow controller is set at 20 cm^3 per minute for controlling gas flow into the cyrogenic trapping unit.

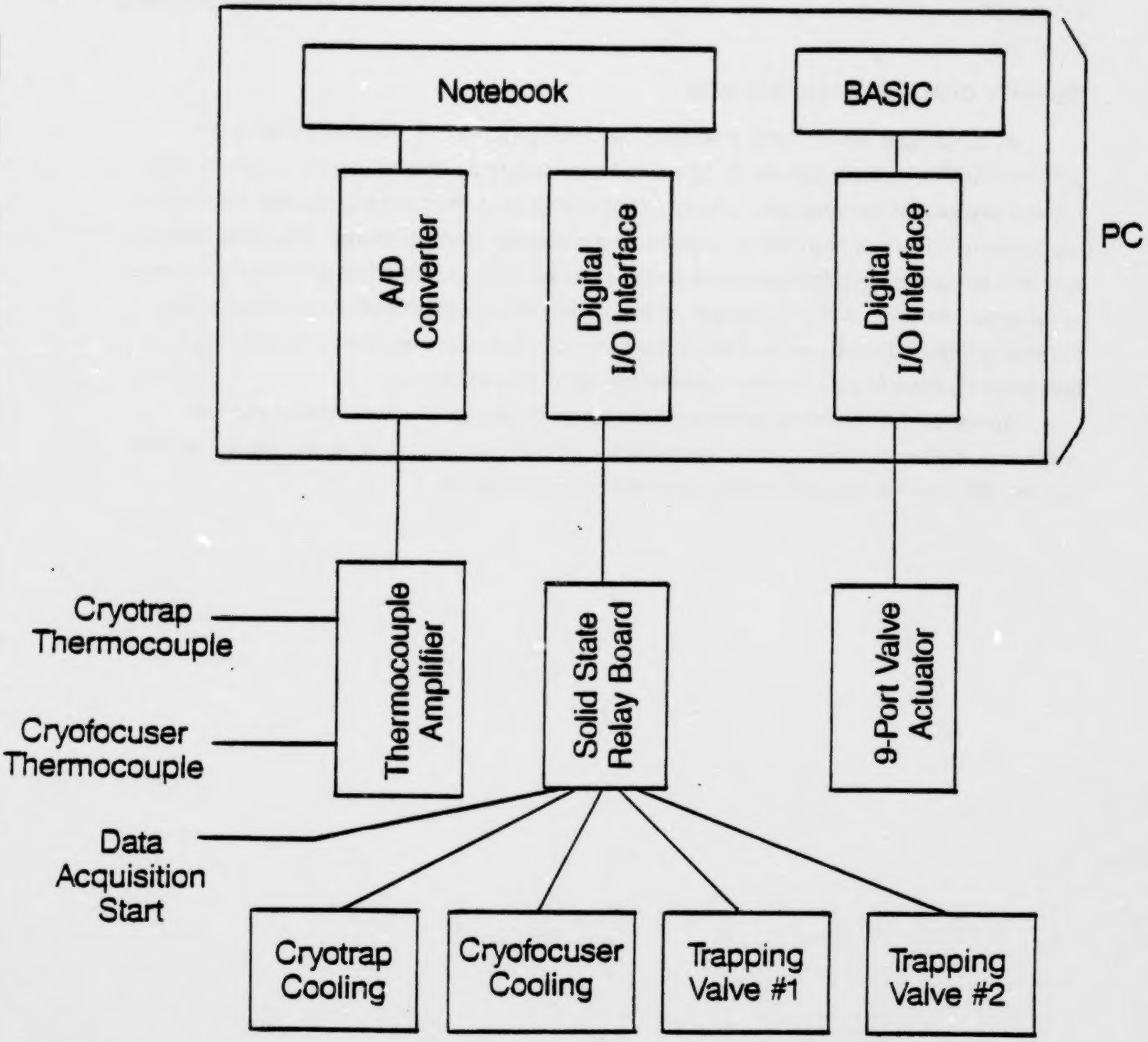
After cylinder connection and purging is complete, the operator runs a BASIC computer program for controlling the number of analyses to perform and the sequence in which cylinders will be analyzed. Any number of analyses can be performed, but only a maximum of eight different cylinders can be analyzed.

After the operator verifies that the correct sequence of analysis has been input, the system then is controlled entirely by the personal computer. Shown in Figure 4 is a schematic of the automated analysis process control. The personal computer is configured with two hardware devices for controlling the cryogenic trapping unit. These are an eight-channel analog-to-digital converter and a 24-bit parallel digital input/output interface. Control of the cyrogenic trapping process is achieved with a software package called Notebook from Laboratory Technologies Corporation. This software enables digital control of solid-state relays contained in the cyrogenic trapping unit for cryogenic solenoid activation, six-port valve switching, and automatic start of GC data acquisition.

An additional digital input/output board, which is programmed in BASIC, is used to control the electric valve actuator for the nine-port multiposition valve.

When the process control routine is begun, the cryotrap cooling solenoid is opened, which allows liquid nitrogen to flow to the cryotrap. The trap temperature is monitored by a thermocouple, and the amplified thermocouple signal is used as a trigger for beginning sample gas trapping. When the cryotrap temperature reaches -150°C, two six-port valves within the cryotrapping unit are switched to direct sample gas into the cryotrap. After 10 minutes of trapping at 20 cm^3 per minute, a valve switch is performed to divert the sample gas to a vent. After 10 seconds, the liquid nitrogen flow to the cryotrap is ceased and the trap begins heating to 150°C. After 20 seconds of heating, another valve switch diverts helium carrier gas through the cryotrap. From the cryotrapping unit, the carrier gas with the analyte compounds passes through a heated 1/16 in. OD stainless steel tube to the capillary column inlet.

The first portion of the capillary column is housed in a Teflon sleeve through which liquid nitrogen is passed during sample injection to achieve cryofocusing of the analytes. The cryofocuser is kept cooled to -100°C for 2 minutes after the injection is made and then heated rapidly to 150°C to begin chromatographing the analytes.



Notebook
BASIC
A/D Converter
Digital I/O Interface
Digital I/O Interface
PC
Cryotrap Thermocouple
Cryofocuser Thermocouple
Thermocouple Amplifier
Solid State Relay Board
9-Port Valve Actuator
Data Acquisition Start
Cryotrap Cooling
Cryofocuser Cooling
Trapping Valve #1
Trapping Valve #2

Figure 4. Automated analysis process control.

The carrier gas outlet flow is split approximately 10:1 between the FID and ECD through the use of an SGE variable split outlet splitter. The FID signal is processed with the HP-5880A Level 4 processor, and the ECD signal is processed with an HP-3393A computing integrator.

QUALITY CONTROL PROCEDURES

As discussed earlier, NBS standards for each group are developed for EPA and provided to RTI for both calibration of the detector response and for quality control during routine analysis of commercial mixtures. One standard is used to establish the instrument response factors prior to initiating analysis of a particular cylinder group. The other standard is analyzed as a quality control cylinder with each set of cylinders attached to the system for automated analysis. If the measured concentration of any component in the NBS quality control cylinder differs by more than 10 percent from the assigned concentration, the instrument is recalibrated and the sample cylinders are reanalyzed.

Appendix A contains a summary table for each Group I, II, III, IV, and V cylinder analyzed. Included in each summary table are the RTI stability analysis and the RTI quality control result on the day the stability analysis was conducted.

SECTION 3

PERFORMANCE AUDITS

Research Triangle Institute supplies cylinder gases for audits upon request from USEPA, state or local agencies or their contractors. A contractor must be performing hazardous waste trial burn tests or ambient air measurements at the request of a Federal, state or local agency in order to qualify for the performance audit. When a request is received, the cylinder pressure is measured and the cylinder is shipped by overland carrier. When a cylinder gas is used to audit the VOST system for a trial burn test, an aluminum suitcase is also sent. The aluminum suitcase contains a gas regulator, a glass manifold with heating tape, and necessary tubing and fittings to draw the cylinder gas sample into the glass manifold. The audit gas is then drawn at atmospheric pressure from the manifold into the VOST system. A schematic of this audit gas delivery system is shown in Appendix B, Figure 1. A letter is included with the audit cylinder which gives general instructions for conducting the audit (see Appendix B.). Detailed instructions are shown in Appendix B for conducting an audit of VOST (Instruction No. 3) and bag measurements (Instruction No. 1) during a hazardous waste trial burn. The audit gas concentration for each compound and cylinder gas pressure are provided to the requesting agency audit coordinator. There is no charge for the audit, except for the cost of returning the audit cylinder.

To date, 268 performance audits have been initiated; 249 are complete. The sampling and analysis methods used by auditees during performance audits are summarized in Table 3. The audit results currently available are presented in Table 4. The audit results are usually within ±50 percent of the audit concentrations measured by RTI.

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits

Audit No.	Client*	Use of audit material	Measurement system audited
1A	A	VOST method evaluation	Sampling by VOST method Analysis by GC/MS
1B	A	BAG method evaluation (RCRA testing)	Sampling by BAG Analysis by GC/FID-ECD
2A	B	VOST method evaluation	Sampling by VOST method Analysis by GC/MS
2B	B	BAG method evaluation (RCRA testing)	Sampling by BAG Analysis by GC/ECD-PID
3	C	VOST method evaluation	Sampling by VOST Analysis by GC/PID-Hall Detector
4	D	VOST method evaluation	Sampling by VOST Analysis by GC/MS
5	Region V U.S. EPA	Hazardous waste incineration trial burn analysis evaluation	Sampling by VOST Analysis by GC/MS
6	Combustion Research Facility U.S. EPA	VOST method evaluation	Sampling by VOST Analysis by GC/MS
7	E	Hazardous waste incineration burn analysis evaluation	Direct analysis by GC/ECD
8	F	VOST method evaluation	Sampling by VOST Analysis by GC/MS
9	Region III U.S. EPA	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
10	C	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID
11	B	VOST method evaluation	Sampling by VOST Analysis by GC/MS
12	B	VOST method evaluation	Sampling by VOST Analysis by GC/MS
13	E	Hazardous waste incineration trial burn analysis evaluation	Direct analysis by GC/ECD
14	E	Hazardous waste incineration trial burn analysis evaluation	Direct analysis by GC/ECD
15	Region VI U.S. EPA	Ambient air monitoring instrument checkout	Analysis by ambient hydrocarbon analyzer
16A	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
16B	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
17	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
18A	I	Ambient air measurement method evaluation	Analysis by direct injection followed by GC/ECD
18B	I	Ambient air measurement method evaluation	Method 1 sampling by Tedlar bags and Tenax-charcoal with analysis by GC/ECD Method 2 sampling by Tenax-charcoal with analysis by GC/FID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
18C	I	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
19	B	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
20	J	Hazardous waste incineration trial burn	Direct analysis by MS/MS
21	K	Hazardous waste incineration trial burn	Sampling method unknown Analysis by GC/ECD or FID
22	L	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
23	M	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID/ECD/PID/Hall detectors
24	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
25	I	Ambient air measurement method evaluation	Sampling method unknown Analysis method unknown
26	N	Hazardous waste incineration trial burn	Sampling by glass bulb Analysis by GC/Hall detector
27A	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration analysis by GC/ECD
27B	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by direct injection into GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
27C	I	Ambient air measurement method evaluation	Method 1: sampling by Tedlar bags and Tenax trap with analysis by GC/FID Method 2: sampling by Tedlar bag with analysis by direct injection into GC/ECD
28	O	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
29	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
30A	P	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/ECD
30B	P	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/ECD
31	Q	Ambient air measurement method evaluation	Sampling method unknown Analysis method unknown
32	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
33	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
34	R	Ambient air measurement method evaluation	Sampling by Tenax-charcoal tubes Analysis method unknown
35	C	Ambient air measurement method evaluation	Sampling by direct injection and cryotrap with analysis by MS
36	C	Ambient air measurement method evaluation	Sampling by direct injection and cryotrap with analysis by MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
37	S	Hazardous waste incineration VOST method evaluation	Sampling by VOST Analysis by GC/FID
38	L	Ambient air measurement method evaluation	Direct analysis by GC/FID
39	L	Ambient air measurement method evaluation	Sampling on charcoal Analysis by GC/MS
40	T	Ambient air measurement method evaluation (hazardous waste landfill)	Sampling by Tenax loading Analysis by GC/MS
41	T	Ambient air measurement method evaluation (hazardous waste landfill)	Sampling by Tenax loading Analysis by GC/MS
42 (Lab A)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/ECD/PID
42 (Lab A)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/ECD/FID
42 (Lab B)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by preconcentration on Tenax-charcoal trap Analysis by GC/FID and GC/ECD
42 (Lab B)	I	Ambient air measurement method evaluation	Sampling by Tenax-charcoal trap Analysis by GC/FID and GC/ECD
42 (Lab C)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/PID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
42 (Lab C)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/PID
42 (Lab D)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/ECD
42 (Lab D)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags followed by cryogenic preconcentration Analysis by GC/ECD and GC/PID
43 (Lab A)	P	Ambient air measurement method evaluation	Analysis by direct injection into GC/ECD
43 (Lab B)	P	Ambient air measurement method evaluation	Analysis by GC/ECD
44	U	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
45	U	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
46	V	Ambient air analysis method evaluation	Analysis by GC/MS
47	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
48	Region III U.S. EPA	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by portable GC/PID
49	Region III U.S. EPA	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by portable GC/PID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
50	V	Ambient air measurement method evaluation	Analysis by cryogenic trapping followed by GC/ECD/FID
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID
51 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID
52	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID
53	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
54	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Analysis by direct injection using CI/MS/MS
55	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Analysis by direct injection using CI/MS/MS
56	X	Ambient air analysis method evaluation	Direct analysis by portable GC/PID
57	Y	Ambient air measurement method evaluation	Sampling by Tenax cartridges Analysis by GC/FID
58	V	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID/ECD
59	I	Ambient air measurement method evaluation at hazardous waste landfill	Direct analysis by portable GC
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bags Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bag Analysis by GC/ECD
60 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bag Analysis by GC/ECD
60 (Lab C)	I	Ambient air measurement at hazardous waste landfill	Analysis by cryogenic trapping followed by GC/PID/ECD
60 (Lab D)	I	Ambient air measurement at hazardous waste landfill	Analysis by cryogenic trapping followed by GC/ECD
61	I	Ambient air measurement at hazardous waste landfill	Direct analysis by portable GC
62	ASRL U.S. EPA	Ambient air analysis method evaluation	Direct analysis by GC/FID
63	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
64	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
65	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
66	KK	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
67	KK	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
68	Z	Hazardous waste trial burn	Sampling into Tedlar bags Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
69	Z	Hazardous waste trial burn	Sampling by VOST Analysis by GC/ECD
70	AA	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
71	HH	Hazardous waste incineration	Sampling by VOST Analysis by GC/MS
72	HH	Hazardous waste incineration (boiler)	Sampling by VOST Analysis by GC/MS
73	HH	Hazardous waste incineration (boiler)	Sampling by VOST Analysis by GC/MS
74	U.S. EPA ASRL (RTP)	Ambient air analysis method evaluation	Direct analysis by GC/FID
75	II	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS
76	V	Ambient air analysis method evaluation	Analysis by cryogenic preconcentration followed by GC/FID/ECD
77	C	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID
78	C	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID
79	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
80	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
81	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
82	CC	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
83	DD	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/FID
84	DD	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/FID
85	DD	Ambient air measurement method evaluation	Sampling by VOST Analysis by GC/FID
86	EE	Hazardous waste trial burn	Sampling by VOST Analysis by GC/ECD
87	FF	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
88	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/ECD
89	Z	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
90	Z	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
91	LL	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
92	LL	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
93	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
94	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
95	MM	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
96	VV & NN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
97	VV & NN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
98	OO	Ambient air monitoring method evaluation	Sampling by cryogenic preconcentration with analysis by GC/FID
99	OO	Ambient air monitoring method evaluation	Sampling by cryogenic preconcentration with analysis by GC/FID
100 (Lab A)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab B)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab C)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab D)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/FID/ECD
100 (Lab E)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
100 (Lab F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab G)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
101	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
102	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
103	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
104	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
105	PP	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
106	I	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/FID/ECD
107	HH	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
108	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
109	QQ	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID
110	QQ	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
111	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/Hall/PID
112	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
113	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
114	V	Ambient air monitoring method evaluation	Direct analysis by GC/MS
115	V	Ambient air monitoring method evaluation	Direct analysis by GC/MS
116	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
117	TT	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/FID/ECD
118 (Lab A-F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/FID/ECD
119	SS	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/PID
120	WW	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/PID
121	XX	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
122	XX	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
123	TT	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID/ECD
124	YY	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
125	YY	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
126	ZZ	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/MS
127	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
128	KK	Hazardous waste landfill emissions monitoring	Sampling by charcoal tube, VOST Analysis by GC/MS
129	KK	Hazardous waste landfill emissions monitoring	Sampling by charcoal tube, VOST Analysis by GC/MS
130 (Lab A-F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/ECD/PID/FID
131	H	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
132	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
133	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/Hall/PID
134	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
135	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID
136	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID
137	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
138	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
139	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
140	Region VII	Ambient air monitoring method evaluation	Sampling by cryogenic trap Analysis by GC/FID
141	Region VII	Ambient air monitoring method evaluation	Sampling by cryogenic trap Analysis by GC/FID
142	Q	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
143	AC	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
144	VV	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
145	VV	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
146	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
147	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method
148	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method
149	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
150	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
151	AH	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by TAGA MS/MS
152	AH	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by TAGA MS/MS
153	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
154	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
155	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with analysis by GC/MS
156	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with analysis by GC/MS
157	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with analysis by GC/MS
158	X	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/PID

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
159	AF	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
160	AJ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
161	AG	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
162	AG	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
163	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
164	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
165 (Lab A-E)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD/FID
166	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
167	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
168	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
169	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
170	AK	Hazardous waste trial burn	Sampling by direct injection Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
171	AK	Hazardous waste trial burn	Sampling by direct injection Analysis by GC/ECD
172	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS
173	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS
174	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS
175	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
176	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
177	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
178	AM	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
179	AM	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
180	QQ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
181	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
182	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/PID/Hall detector

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
183	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
184	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
185	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
186	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
187	A	Ambient air monitoring method evaluation	Sampling by cryogenic trap Analysis by GC/FID/ECD/PID
188	QQ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
189	AN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
190	AN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
191	JJ	Hazardous waste landfill emission measurements	Sampling by direct injection Analysis by GC/MS
192	JJ	Hazardous waste landfill emissions monitoring	Sampling by direct injection Analysis by GC/MS
193	KK	Hazardous waste landfill emissions monitoring	Sampling by stainless steel canister Analysis by GC/MS
194	KK	Hazardous waste landfill emissions monitoring	Sampling by stainless steel canister Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
195	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
196	A	Ambient air monitoring method evaluation	Sampling Method 1: Tenax cartridge Sampling Method 2: Carbosieve/ carbotrap in series Analysis, both GC/MS
197	A	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/MS
198	AD	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
199	AO	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
200	AO	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
201A	I	Ambient air monitoring method evaluation	Sampling by canister/direct injection Analysis by GC/ECD/PID
201B	I	Ambient air monitoring method evaluation	Sampling by canister/direct injection Analysis by GC/ECD/PID
202	AP	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
203	AK	Hazardous waste trial burn	Sampling by bag Analysis by GC/ECD
204	AK	Hazardous waste trial burn	Sampling by bag Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
205	AA	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
206	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
207	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
208	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
209	AQ	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/PID
210	AQ	Ambient air monitoring method evaluation	Sampling by direct injection Analysis by GC/PID
211	KK	Ambient air monitoring method evaluation	Sampling by Tenax Analysis by GC/MS
212	RR	Hazardous landfill ambient air monitoring	Sampling by Tedlar bag Analysis by GC/Hall detector/ PID
213	AS	Ambient air monitoring method evaluation	Sampling by S.S. Canister Analysis by GC/FID
213	AS	Ambient air monitoring method evaluation	Sampling by Tenax Analysis by GC/MS
214	AL	Hazardous waste landfill ambient air monitoring	Sampling by Tedlar bag Analysis by GC/ECD

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
215	HH	Hazardous waste landfill method evaluation	Sampling by canisters/Tenax Analysis by GC/MS
216	HH	Hazardous waste landfill method evaluation	Sampling by canisters/Tenax Analysis by GC/MS
217	HH	Hazardous waste landfill method evaluation	Sampling by canisters/Tenax Analysis by GC/MS
218	AT	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
219	AT	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
220	AT	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
221	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
222	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
223	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC
224	AG	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
225	A	Ambient air monitoring method evaluation	Sampling by canisters Analysis by GC/MS
226	AU	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
227	Q	Ambient air monitoring method evaluation	Sampling by Tenax cartridges Analysis by GC/FID
228	AV	Hazardous waste landfill method evaluation	Sampling by Tedlar bag/syringe Analysis by GC/MS
229	AW	Ambient air monitoring method evaluation	Sampling by syringes and Tenax/ charcoal cartridges Analysis by GC/ECD and GC/FID
230	AW	Ambient air monitoring method evaluation	Sampling by syringes and Tenax/ charcoal cartridges Analysis by GC/ECD and GC/FID
231	A	Hazardous waste landfill ambient air monitoring	Sampling by bag Analysis by GC/MS
232	A	Hazardous waste landfill ambient air monitoring	Sampling by bag Analysis by GC/MS
233	A	Hazardous waste landfill ambient air monitoring	Sampling by bag Analysis by GC/MS
233 (Reanalysis)	A	Hazardous waste landfill ambient air monitoring	Sampling by bag Analysis by GC/MS
234	A	Ambient air monitoring method evaluation	Sampling by canister/direct analysis Analysis by GC/FID/ECD/PID GC/MD
234	A	Ambient air monitoring method evaluation	Sampling by canister/direct analysis Analysis by GC/FID/ECD/PID GC/MS
235	PP	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
236	AA	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
237	RR	Hazardous waste landfill ambient air monitoring	Sampling by Tedlar bags Analysis by GC/Hall detector/PID
238	A	Ambient air monitoring method evaluation	Sampling by canisters/direct analysis Analysis by GC/FID/ECD/PID and GC/MS
239	AD	Hazardous waste trial burn	Sampling by VOST/Modified Method 5 Analysis by GC/MS
240	A	Ambient air monitoring method evaluation	Sampling by canisters Analysis by GC/MS
241	VV	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
242	AL	Hazardous waste landfill method evaluation	Sampling by Tedlar bag Analysis by GC/MS
243	A	Hazardous waste landfill ambient air monitoring	Sampling by Tedlar bag Analysis by GC/MS
244	RR	Hazardous waste landfill ambient air monitoring	Sampling by Tedlar bag Analysis by GC/Hall detector/PID
245	AX	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
246	AY	Hazardous waste trial burn	Sampling by canister Analysis by GC/MS
247	AY	Hazardous waste trial burn	Sampling by VOST Analysis by Method 8240
248	AP	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
249	BA	Ambient air monitoring method evaluation	Sampling by GC (direct) Analysis by GC
250	BA	Ambient air monitoring method evaluation	Sampling by GC (direct) Analysis by GC
251	BA	Ambient air monitoring method evaluation	Sampling by GC (direct) Analysis by GC
252	KK	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
253	KK	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
254	BG	Hazardous waste landfill method evaluation	Sampling by Tedlar bag Analysis by GC/selective detector
255	BG	Hazardous waste landfill method evaluation	Sampling by Tedlar bag Analysis by GC/selective detector
256	BC	Ambient air monitoring method evaluation	Sampling by stainless steel canisters/Tedlar bags Analysis by GC/ECD
257	BC	Ambient air monitoring method evaluation	Sampling by stainless steel canisters/Tedlar bags Analysis by GC/ECD
258	BD	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
259	BD	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
260	BE	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of audit material	Measurement system audited
261	AA	Hazardous waste trial burn	Sampling by Method 18, Tedlar bag sampling Analysis by GC/selective detector
262	BE	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
263	BE	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
264	Q	Ambient air monitoring method evaluation	Sampling by Tenax Analysis by GC/FID/HECD
264	Q	Ambient air monitoring method evaluation	Sampling by Tenax Analysis by GC/MS
265	BI	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
266	BG	Hazardous waste landfill method evaluation	Sampling by Tedlar bags Analysis by GC/selective detectors
267	RR	Hazardous waste landfill method evaluation	Sampling by Tedlar bags Analysis by GC/Hall detector/PID
268	BF	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

*Whenever the auditee is known, an alphabetical letter is shown. Whenever the auditee is unknown, the name of the agency requesting the audit is shown.

Table 4. Summary of Performance Audit Results

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
1A	A	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	-50	B
			Chloroform	23.0 ± 1.0	0	
			Perchloroethylene	29.0 ± 2.0	+17	
			Benzene	18.0 ± 1.0	+31	
			Vinyl Chloride	31.0 ± 1.0	-50	
1B	A	BAG method evaluation (RCRA Testing)	Carbon Tetrachloride	141 ± 3.0	+60	B
			Chloroform	120 ± 3.0	+34	
			Perchloroethylene	126 ± 3.0	+31	
			Benzene	133 ± 3.0	+18	
			Vinyl Chloride	154 ± 3.0	-33	
2A	B	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	+27	B
			Chloroform	23.0 ± 1.0	+28	
			Perchloroethylene	29.0 ± 2.0	+34	
			Benzene	18.0 ± 1.0	+32	
			Vinyl Chloride	31.0 ± 1.0	-66	
2B	B	BAG method evaluation (RCRA Testing)	Carbon Tetrachloride	141 ± 3.0	-13	B
			Chloroform	120 ± 3.0	-16	
			Perchloroethylene	126 ± 3.0	-44	
			Benzene	133 ± 3.0	-27	
			Vinyl Chloride	154 ± 3.0	-34	
3	C	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	+10	B
			Chloroform	23.0 ± 1.0	+20	
			Benzene	18.0 ± 1.0	-9	
4	D	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	-14	B
			Chloroform	23.0 ± 1.0	-20	
			Perchloroethylene	29.0 ± 2.0	+17	
			Benzene	18.0 ± 1.0	+6	
			Vinyl Chloride	31.0 ± 1.0	-10	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
5	Region V U.S. EPA	Hazardous waste incineration trial burn analysis evaluation	Carbon Tetrachloride	11.0 ± 0.3	-31	B
			Chloroform	45.0 ± 0.9	+200	
			Vinyl Chloride	20.5 ± 0.7	+7	
6	Combustion Research Facility U.S. EPA	VOST method evaluation	Carbon Tetrachloride	9.9 ± 0.3	+22	B
			Chloroform	42.0 ± 0.9	0	
			Perchloroethylene	9.6 ± 0.2	+40	
			Benzene	20.0 ± 0.6	+3	
7	E	Hazardous waste incineration burn analysis evaluation	Carbon Tetrachloride	11.8 ± 0.4	-3	B
			Chloroform	10.5 ± 0.2	+86	
8	F	VOST method evaluation	Group I	7 - 90	NA	C
9	Region III U.S. EPA	Ambient air measurement method evaluation	Group I	7 - 90	NA	C
10	C	Ambient measurement method evaluation	Carbon Tetrachloride	323 ± 9.7	+6	B
			Chloroform	128 ± 2.7	+4	
			Perchloroethylene	119 ± 2.9	-3	
			Benzene	379 ± 12.1	-2	
			Vinyl Chloride	403 ± 12.1	-3	
11	B	VOST method evaluation	Carbon Tetrachloride	11.0 ± 0.3	+5	B
			Chloroform	47.4 ± 1.0	+3	
			Perchloroethylene	11.3 ± 0.3	+5	
			Benzene	25.2 ± 0.8	-7	
			Vinyl Chloride	19.8 ± 0.6	-85	
12	B	VOST method evaluation	Carbon Tetrachloride	6.6 ± 0.2	+21	B
			Chloroform	7.4 ± 0.2	+12	
			Perchloroethylene	21.9 ± 0.5	+56	
			Benzene	26.0 ± 0.8	+47	
			Vinyl Chloride	29.6 ± 0.9	-52	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
13	E	Hazardous waste trial burn analysis evaluation	Carbon Tetrachloride Chloroform	11.6 ± 0.4 10.2 ± 0.2	+11 +100	B
14	E	Hazardous waste trial burn analysis evaluation	Carbon Tetrachloride Chloroform	24.0 ± 0.7 16.0 ± 0.3	-25 +31	B
15	Region V U.S. EPA	Ambient air monitoring instrument checkout*****	Carbon Tetrachloride Chloroform Perchloroethylene Benzene	11.0 ± 0.3 47.4 ± 1.0 11.3 ± 0.3 25.2 ± 0.8	-45 +58 -68 -56	B
16A	G	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	13.4 ± 0.4 12.4 ± 0.3 75.6 ± 1.8 51.2 ± 1.6 29.6 ± 0.9	+1 +5 +18 -9 +7	B
16B	G	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	13.4 ± 0.4 12.4 ± 0.3 75.6 ± 1.8 51.2 ± 1.6 29.6 ± 0.9	+98 +140 +13 -8 +6	B
17	H	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	9.9 ± 0.3 42.0 ± 0.9 9.6 ± 0.2 20.0 ± 0.6 19.8 ± 0.6	-19 -32 -14 -21 -41	B
18A	I	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene	132 ± 4.0 129 ± 2.7 136 ± 3.3	-17 +16 +18	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
18A	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	-23	B
			Chloroform	40.6 ± 0.9	+1	
			Perchloroethylene	9.5 ± 0.2	+16	
18B	I	Ambient air measurement method evaluation	Carbon Tetrachloride	132 ± 4.0	+38	B
			Chloroform	129 ± 2.7	+27	
			Perchloroethylene	136 ± 3.3	+34	
			Benzene	146 ± 4.7	+11	
			Vinyl Chloride	153 ± 4.9	-5	
18B	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+58	B
			Chloroform	40.6 ± 0.9	+35	
			Perchloroethylene	9.5 ± 0.2	+332	
			Benzene	19.4 ± 0.6	+240	
			Vinyl Chloride	20.6 ± 0.7	-3	
18C	I	Ambient air measurement method evaluation	Group I	90 - 430	NA	C
18C	I	Ambient air measurement method evaluation	Benzene	19.4 ± 0.6	-2	B
19	B	Hazardous waste trial burn	Carbon Tetrachloride	11.6 ± 0.3	+28	B
20	J	Hazardous waste trial burn	Group I	7 - 90	NA	C
21	K	Hazardous waste trial burn	Group I	7 - 90	NA	C
22	L	Hazardous waste trial burn	Carbon Tetrachloride	12.7 ± 0.4	-21	B
			Chloroform	12.3 ± 0.3	-27	
			Perchloroethylene	62.2 ± 1.5	-44	
			Benzene	48.0 ± 1.5	-63	
			Vinyl Chloride	31.3 ± 1.0	-81	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
23	M	Ambient air measurement method evaluation	Carbon Tetrachloride	15.7 ± 0.5	-5	B
			Chloroform	15.2 ± 0.3	+5	
			Perchloroethylene	15.7 ± 0.4	+2	
			Benzene	18.2 ± 0.6	-12	
			Vinyl Chloride	15.4 ± 0.5	-29	
24	G	Ambient air measurement method evaluation	Methyl Ethyl Ketone	19.4 ± 1.1	+18	B
			Trichloroethylene	14.7 ± 0.7	+16	
			1,2-Dichloroethane	14.4 ± 0.7	+164	
			1,1,1-Trichloroethane	14.5 ± 0.7	+110	
25	I	Ambient air measurement method evaluation	Carbon Tetrachloride	7.1 ± 0.2	-16	B
			Chloroform	8.1 ± 0.2	-26	
			Perchloroethylene	21.1 ± 0.5	+4	
			Benzene	29.9 ± 1.0	-20	
			Vinyl Chloride	32.0 ± 1.0	-31	
26	N	Hazardous waste trial burn	Trichlorofluoromethane	15.4 ± 0.5	-42	B
			Dichlorodifluoromethane	16.6 ± 0.7	-10	
27A	I	Ambient air measurement method evaluation	Trichloroethylene	145 ± 7	+17	B
			1,2-Dichloroethane	157 ± 8	-5	
			1,2-Dibromoethane	196 ± 8	+63	
27A	I	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+10	B
			1,2-Dichloroethane	14.7 ± 0.7	+54	
			1,2-Dibromoethane	16.8 ± 0.7	+16	
			1,1,1-Trichloroethane	14.8 ± 0.7	+19	
27B	I	Ambient air measurement method evaluation	Trichloroethylene	145 ± 7	-30	B
			Trichlorofluoromethane	155 ± 5	-3	
			Dichlorodifluoromethane	170 ± 7	-75	
			1,2-Dibromoethane	196 ± 8	-52	

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
27B	I	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	-52	B
			1,2-Dichloroethane	14.7 ± 0.7	-93	
			Trichlorofluoromethane	15.5 ± 0.5	-16	
			Dichlorodifluoromethane	16.7 ± 0.7	-71	
			1,2-Dibromoethane	16.8 ± 0.7	-73	
			1,1,1-Trichloroethane	14.8 ± 0.7	-16	
27C	I	Ambient air measurement method evaluation	Methyl Ethyl Ketone	170 ± 9	+2	B
			Trichloroethylene	145 ± 7	+36	
			Trichlorofluoromethane	155 ± 5	-63	
			Dichlorodifluoromethane	170 ± 7	-2	
27C	I	Ambient air measurement method evaluation	Methyl Ethyl Ketone	8.5 ± 0.5	+124	B
			Trichloroethylene	15.1 ± 0.7	-1	
			Trichlorofluoromethane	15.5 ± 0.5	+158	
			Dichlorodifluoromethane	16.7 ± 0.7	+8	
			1,1,1-Trichloroethane	14.8 ± 0.7	+42	
28	O	Hazardous waste trial burn	Carbon Tetrachloride	9.5 ± 0.3	+22	B
			Chloroform	40.6 ± 0.9	+9	
			Perchloroethylene	9.5 ± 0.2	+16	
			Benzene	19.4 ± 0.6	+17	
			Vinyl Chloride	20.6 ± 0.7	-13	
29	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	11.4 ± 0.3	+5	B
			Chloroform	43.9 ± 0.9	+8	
			Perchloroethylene	10.3 ± 0.2	+20	
			Benzene	19.9 ± 0.6	+23	
30A	P	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+12	B
30B	P	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+70	B

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
31	Q	Ambient air measurement method evaluation	Carbon Tetrachloride	299 ± 9.0	-56	B
			Chloroform	126 ± 2.6	-33	
			Perchloroethylene	103 ± 2.5	-60	
			Benzene	378 ± 12.1	+18	
32	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	9.6 ± 0.3	-1	B
			Chloroform	37.1 ± 0.8	+11	
			Perchloroethylene	9.1 ± 0.2	-18	
			Benzene	19.4 ± 0.6	+7	
33	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	37.7 ± 1.1	-25	B
			Chloroform	8.3 ± 0.2	-24	
			Perchloroethylene	8.4 ± 0.2	-17	
			Benzene	40.7 ± 1.3	-26	
34	R	Ambient air measurement method evaluation	Group I	7 - 90	NA	C
35	C	Ambient air measurement method evaluation	Chloroform	43.9 ± 0.9	+25	B
			Perchloroethylene	10.3 ± 0.2	+25	
			Benzene	19.9 ± 0.6	+25	
36	C	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+20	B
			1,1,1-Trichloroethane	14.8 ± 0.7	+29	
37	S	Hazardous waste incineration sampling method evaluation	Acetonitrile	7.9 ± 0.6	+377	B
			Trichloroethylene	9.0 ± 0.4	+39	
			Trichlorofluoromethane	9.4 ± 0.3	+3	
			1,2-Dibromoethane	10.2 ± 0.4	+1	
			1,1,1-Trichloroethane	10.1 ± 0.5	+7	
38	L	Ambient air monitoring measurement method evaluation	Carbon Tetrachloride	386.2 ± 2.6	-100	B
			Chloroform	331.0 ± 7.0	-96	
			Perchloroethylene	107.0 ± 7.4	-40	
			Benzene	137.0 ± 4.4	+13	
			Vinyl Chloride	150.0 ± 4.8	-39	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
39	L	Ambient air measurement method evaluation	Acetonitrile	106 ± 7	-100	B
			Methyl Ethyl Ketone	123 ± 7	-65	
			Trichloroethylene	142 ± 7	-67	
			1,2-Dichloroethane	139 ± 7	-17	
			Trichlorofluoromethane	161 ± 6	+248	
			Bromomethane	168 ± 7	-100	
			Dichlorodifluoromethane	170 ± 7	-79	
			1,2-Dibromoethane	192 ± 8	-86	
40	T	Ambient air measurement method evaluation (hazardous waste landfill)	Carbon Tetrachloride	11.4 ± 0.3	-29	B
			Chloroform	43.9 ± 0.9	-14	
			Perchloroethylene	10.3 ± 0.2	-15	
			Benzene	19.9 ± 0.6	-5	
41	T	Ambient air measurement method evaluation (hazardous waste landfill)	Trichloroethylene	15.1 ± 0.7	-7	B
			1,2-Dichloroethane	14.7 ± 0.7	-2	
			1,1,1-Trichloroethane	14.8 ± 0.7	-3	
42 (Lab A)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+16	B
			Chloroform	37.3 ± 0.8	-4	
			Perchloroethylene	10.0 ± 0.2	0	
			Benzene	19.7 ± 0.6	-19	
			Vinyl Chloride	20.6 ± 0.7	-13	
42 (Lab A)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	+10	B
			Chloroform	3.7 ± 0.1	+8	
			Perchloroethylene	14.2 ± 0.3	+6	
			Benzene	12.2 ± 0.4	-10	
			Vinyl Chloride	11.6 ± 0.4	-22	
42 (Lab B)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	-5	B
			Chloroform	37.3 ± 0.8	+2	
			Perchloroethylene	10.2 ± 0.2	-20	
			Benzene	19.7 ± 0.6	-9	
			Vinyl Chloride	20.6 ± 0.7	-8	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
42 (Lab B)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	-17	B
			Chloroform	3.7 ± 0.1	-14	
			Perchloroethylene	14.2 ± 0.3	-15	
			Benzene	12.2 ± 0.4	-10	
			Vinyl Chloride	11.6 ± 0.4	-5	
42 (Lab C)	I	Ambient air measurement method evaluation	Benzene	19.7 ± 0.6	-9	B
42 (Lab C)	I	Ambient air measurement method evaluation	Benzene	12.2 ± 0.4	-18	B
42 (Lab D)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+47	B
			Chloroform	37.3 ± 0.8	+18	
			Perchloroethylene	10.0 ± 0.2	+50	
			Benzene	19.7 ± 0.6	+2	
42 (Lab D)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	+52	B
			Chloroform	3.7 ± 0.1	-5	
			Perchloroethylene	14.2 ± 0.3	+34	
			Benzene	12.2 ± 0.4	-2	
43 (Lab A)	P	Ambient air measurement method evaluation	Trichloroethylene	142 ± 7.0	+1	B
43 (Lab B)	P	Ambient air measurement method evaluation	Trichloroethylene	142 ± 7.0	+44	B
44	U	Hazardous waste trial burn	Carbon Tetrachloride	11.4 ± 0.3	-68	B
			Chloroform	43.9 ± 0.9	-25	
			Perchloroethylene	10.3 ± 0.2	+8	
			Benzene	19.9 ± 0.6	-20	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
45	U	Hazardous waste trial burn	Group II	7 - 90	NA	C
46	V	Ambient air analysis method evaluation	Perchloroethylene Benzene	21.1 ± 0.5 25.9 ± 0.8	+118 +8	B
47	H	Hazardous waste trial burn	Group III	7 - 90	NA	C
48	EPA Region III Annapolis, MD	Ambient air measurement method evaluation	Chloroform Perchloroethylene Benzene Vinyl Chloride	9.5 ± 0.3 10.0 ± 0.2 19.7 ± 0.6 20.6 ± 0.7	-54 +60 +42 +70	B
49	EPA Region III Annapolis, MD	Ambient air measurement method evaluation	Trichloroethylene 1,1,1-Trichloroethane	14.2 ± 0.7 13.3 ± 0.7	+13 -10	B
50	V	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	9.6 ± 0.3 37.1 ± 0.8 9.1 ± 0.2 19.4 ± 0.6 20.4 ± 0.7	-5 +4 +1 +2 -2	B
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Benzene	18.6 ± 0.6	+24	B
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Benzene Vinyl Chloride	44.2 ± 1.4 48.5 ± 1.6	+6 +65	B

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
51 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Vinyl Chloride	48.5 ± 1.6	-1	B
52	I	Ambient air measurement at hazardous waste landfill	Group I	7 - 90	NA	C
53	W	Hazardous waste incineration trial burn	Carbon Tetrachloride	12.3 ± 0.4	+24	B
54	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Group I	7 - 90	NA	C
55	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Group II	7 - 90	NA	C
56	X	Ambient air analysis method evaluation	Vinyl Chloride	50.3 ± 1.6	-1	B
57	Y	Ambient air measurement method evaluation	Group I	7 - 90	NA	C
58	V	Ambient air analysis method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	9.6 ± 0.3 37.1 ± 0.8 9.1 ± 0.2 19.4 ± 0.6 20.4 ± 0.7	-5 +4 +1 +2 -2	B
59	I	Ambient air measurement at hazardous waste landfill	Group I	7 - 90	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+10	B
			1,2-Dichloroethane	8.5 ± 0.4	+34	
			1,2-Dibromoethane	8.5 ± 0.3	+14	
			1,1,1-Trichloroethane	9.4 ± 0.5	+10	
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+6	B
			1,2-Dichloroethane	8.5 ± 0.4	+35	
			1,1,1-Trichloroethane	9.4 ± 0.5	+10	
60 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+58	B
			1,2-Dichloroethane	8.5 ± 0.4	+41	
			Trichlorofluoromethane	9.7 ± 0.3	+24	
			Bromomethane	11.4 ± 0.4	+5	
			1,2-Dibromoethane	8.5 ± 0.3	+64	
			1,1,1-Trichloroethane	9.4 ± 0.5	+60	
60 (Lab C)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	-34	B
			1,2-Dichloroethane	8.5 ± 0.4	+14	
			1,2-Dibromoethane	8.5 ± 0.3	-7	
			1,1,1-Trichloroethane	9.4 ± 0.5	+17	
60 (Lab D)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+26	B
			1,2-Dichloroethane	8.5 ± 0.4	+6	
			1,2-Dibromoethane	8.5 ± 0.3	-7	
			1,1,1-Trichloroethane	9.4 ± 0.5	+4	
61	I	Ambient air measurement at hazardous waste landfill	Group III	7 - 90	NA	C
62	USEPA ASRL	Ambient air analysis method evaluation	Benzene	12.2 ± 0.4	-26	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
63A	JJ	Ambient air measurement method evaluation	Group I	90 - 430	NA	C
63B	JJ	Ambient air measurement method evaluation	Group I	90 - 430	NA	C
63C	JJ	Ambient air measurement method evaluation	Group I	90 - 430	NA	C
63D	JJ	Ambient air measurement method evaluation	Group I	7 - 90	NA	C
64A	JJ	Ambient air measurement method evaluation	Group II	90 - 430	NA	C
64B	JJ	Ambient air measurement method evaluation	Group II	7 - 90	NA	C
64C	JJ	Ambient air measurement method evaluation	Group II	7 - 90	NA	C
64D	JJ	Ambient air measurement method evaluation	Group II	7 - 90	NA	C
65A	JJ	Ambient air measurement method evaluation	Group III	7 - 90	NA	C
65B	JJ	Ambient air measurement method evaluation	Group III	7 - 90	NA	C
65C	JJ	Ambient air measurement method evaluation	Group III	7 - 90	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
66	KK	Ambient air measurement at hazardous waste landfill	Group I	90 - 430	NA	C
67	KK	Ambient air measurement at hazardous waste landfill	Group II	90 - 430	NA	C
68	Z	Hazardous waste trial burn	Carbon Tetrachloride Chloroform	12.3 ± 0.4 12.2 ± 0.3	-43 +15	B
69	Z	Hazardous waste trial burn	Trichloroethylene	9.6 ± 0.5	-6	B
70	AA	Hazardous waste trial burn	Trichloroethylene 1,2-Dichloroethane Trichlorofluoromethane Bromomethane Dichlorodifluoromethane 1,1,1-Trichloroethane	15.1 ± 0.7 15.8 ± 0.8 16.2 ± 0.5 14.0 ± 0.5 16.0 ± 0.7 14.0 ± 0.7	+92 +27 -26 -57 +256 +71	B
71	HH	Hazardous waste incineration (boiler)	Carbon Tetrachloride	6.4 ± 0.2	+30	B
72	HH	Hazardous waste incineration (boiler)	1,1,1-Trichloroethane	13.3 ± 0.7	+31	B
73	HH	Hazardous waste incineration (boiler)	Toluene	10.3 ± 1.3	+21	B
74	USEPA ASRL	Ambient air analysis method evaluation	Benzene	19.4 ± 0.6	-8	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
75	II	Ambient air measurement at hazardous waste landfill	Group I	90 - 430	NA	C
76	V	Ambient air analysis method evaluation	Freon 114	9.1 ± 1.3	+34	B
			Freon 113	10.2 ± 1.0	+8	
			Vinylidene Chloride	8.7 ± 0.9	+1	
			Toluene	10.6 ± 1.3	+10	
			Chlorobenzene	11.1 ± 1.5	+11	
77	C	Ambient air analysis method evaluation	Carbon Tetrachloride	46.0 ± 1.4	+6	B
			Chloroform	10.3 ± 0.2	+1	
			Perchloroethylene	10.7 ± 0.3	-19	
			Benzene	49.0 ± 1.6	-9	
			Vinyl Chloride	50.1 ± 1.6	-24	
78	C	Ambient air analysis method evaluation	Trichloroethylene	9.4 ± 0.5	-5	B
			1,2-Dichloroethane	7.7 ± 0.4	+21	
			1,2-Dibromoethane	7.8 ± 0.3	-18	
			1,1,1-Trichloroethane	9.3 ± 0.5	+17	
79	H	Hazardous waste trial burn	Carbon Tetrachloride	6.4 ± 0.2	-67	B
			Perchloroethylene	21.1 ± 0.5	-86	
80	H	Hazardous waste trial burn	Trichloroethylene	14.2 ± 0.7	+20	B
			1,1,1-Trichloroethane	13.3 ± 0.7	+20	
81	H	Hazardous waste trial burn	Freon 114	8.5 ± 1.3	+131	B
			Freon 113	10.1 ± 1.0	0	
			Vinylidene Chloride	10.9 ± 1.0	-16	
			Acetone	27.6 ± 5.7	-18	
			Toluene	30.8 ± 3.6	+78	
			1,4-Dioxane	28.8 ± 8.9	-79	
			Chlorobenzene	31.4 ± 3.6	+49	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
82	CC	Hazardous waste trial burn	Carbon Tetrachloride Chloroform	37.2 ± 1.1 8.1 ± 0.2	-5 +10	B
83	DD	Ambient air measurement method evaluation	Carbon Tetrachloride	86.2 ± 2.6	+7	B
84	DD	Ambient air measurement method evaluation	Toluene	10.3 ± 1.2	+11	B
85	DD	Ambient air measurement method evaluation	Group II	7 - 90	NA	C
86	FF	Hazardous waste trial burn	Group I	7 - 90	NA	C
87A	FF	Ambient air measurement at hazardous waste landfill	Group II	90 - 430	NA	C
87B	FF	Ambient air measurement at hazardous waste landfill	Group I	90 - 430	NA	C
88	H	Hazardous waste trial burn	Carbon Tetrachloride Perchloroethylene	6.4 ± 0.2 21.1 ± 0.5	+33 +33	B
89	Z	Hazardous waste trial burn	Carbon Tetrachloride Chloroform	9.6 ± 0.3 37.1 ± 0.8	+6 -2	B
90	Z	Hazardous waste trial burn	Trichloroethylene	13.2 ± 0.7	+5	B
91	LL	Hazardous waste trial burn	Carbon Tetrachloride	16.9 ± 0.5	-22	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
92	LL	Hazardous waste trial burn	Trichloroethylene	13.2 ± 0.7	-1	B
93	W	Hazardous waste trial burn	Carbon Tetrachloride	73.9 ± 2.2	+14	B
			Chloroform	349.8 ± 7.4	-6	
			Perchloroethylene	319.9 ± 9.9	-6	
			Benzene	126.9 ± 4.1	+13	
			Vinyl Chloride	160.3 ± 5.2	+53	
94	H	Hazardous waste trial burn	Carbon Tetrachloride	11.4 ± 0.3	-4	B
95	MM	Hazardous waste trial burn	Group I	430 - 10,000	NA	C
96	NN	Hazardous waste trial burn	Carbon Tetrachloride	47.8 ± 1.5	+47	B
97	NN	Hazardous waste trial burn	Freon 113	30.2 ± 3.9	+48	B
98	OO	Ambient air monitoring method evaluation	Carbon Tetrachloride	14.4 ± 0.4	+63	B
			Chloroform	14.4 ± 0.3	+234	
			Vinyl Chloride	31.3 ± 1.0	+3	
99	OO	Ambient air monitoring method evaluation	Trichloroethylene	15.3 ± 0.7	+154	B
			1,2-Dichloroethane	15.4 ± 0.8	+135	
			Trichlorofluoromethane	16.3 ± 0.6	-100	
			Dichlorodifluoromethane	16.3 ± 0.7	+31	
			1,1,1-Trichloroethane	13.9 ± 0.7	+96	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
100 (Lab A)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+16	B
			Chloroform	8.1 ± 0.2	-14	
			Perchloroethylene	9.0 ± 0.2	+10	
			Benzene	39.1 ± 1.3	-13	
			Vinyl Chloride	50.3 ± 1.6	-1	
100 (Lab B)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-30	B
			Chloroform	8.1 ± 0.2	+7	
			Perchloroethylene	9.0 ± 0.2	0	
			Benzene	39.1 ± 1.3	-10	
100 (Lab C)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+26	B
			Chloroform	8.1 ± 0.2	+25	
			Perchloroethylene	9.0 ± 0.2	+27	
			Benzene	39.1 ± 1.3	-9	
			Vinyl Chloride	50.3 ± 1.6	-2	
100 (Lab D)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-9	B
			Chloroform	8.1 ± 0.2	+52	
			Perchloroethylene	9.0 ± 0.2	+3	
			Benzene	39.1 ± 1.3	-9	
			Vinyl Chloride	50.3 ± 1.6	-2	
100 (Lab E)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-9	B
			Chloroform	8.1 ± 0.2	+52	
			Perchloroethylene	9.0 ± 0.2	+20	
100 (Lab F)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+12	B
			Chloroform	8.1 ± 0.2	+5	
			Perchloroethylene	9.0 ± 0.2	+19	
			Benzene	39.1 ± 1.3	-10	
			Vinyl Chloride	50.3 ± 1.6	+22	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
100 (Lab G)	I	Ambient air monitoring method evaluation	Chloroform	8.1 ± 0.2	-6	B
			Benzene	39.1 ± 1.3	-23	
101	H	Hazardous waste trial burn	Carbon Tetrachloride	9.6 ± 0.3	+108	B
			Chloroform	37.1 ± 0.8	+69	
			Perchloroethylene	9.1 ± 0.2	+60	
			Benzene	19.4 ± 0.6	+34	
			Vinyl Chloride	20.4 ± 0.7	+67	
102	H	Hazardous waste trial burn	Vinylidene Chloride	8.5 ± 1.1	+79	B
			Toluene	10.5 ± 3.4	+57	
			Chlorobenzene	10.8 ± 1.8	+47	
103	HH	Hazardous waste trial burn	Group I	90 - 430	NA	C
104	HH	Hazardous waste trial burn	Group III	90 - 430	NA	C
105	PP	Hazardous waste trial burn	Acetonitrile	11.3 ± 0.8	-64	B
			Methyl Ethyl Ketone	30.0 ± 1.6	-23	
			Trichloroethylene	10.2 ± 0.5	-11	
			1,2-Dichloroethane	9.7 ± 0.5	-6	
			Trichlorofluoromethane	10.1 ± 0.3	-29	
			Bromomethane	30.0 ± 1.3	-97	
			Dichlorodifluoromethane	26.3 ± 1.0	-69	
			1,2-Dibromoethane	32.0 ± 1.3	-20	
			1,1,1-Trichloroethane	31.7 ± 1.7	-9	
106A	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	+12	B
			1,2-Dichloroethane	37.4 ± 1.9	+17	
			1,1,1-Trichloroethane	19.1 ± 1.0	-1	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
106B	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	-1	B
			1,2-Dichloroethane	37.4 ± 1.9	-38	
			Dichlorodifluoromethane	20.3 ± 0.8	-6	
			1,2-Dibromoethane	20.8 ± 0.9	-28	
			1,1,1-Trichloroethane	19.1 ± 1.0	+5	
106C	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	+12	B
			1,2-Dichloroethane	37.4 ± 1.9	+50	
			1,2-Dibromoethane	20.8 ± 0.9	+6	
			1,1,1-Trichloroethane	19.1 ± 1.0	-27	
107	HH	Hazardous waste trial burn	Carbon Tetrachloride	13.7 ± 0.4	-12	B
			Perchloroethylene	69.9 ± 1.7	-4	
108	HH	Hazardous waste trial burn	Trichloroethylene	10.1 ± 0.5	-1	B
109	QQ	Hazardous waste trial burn	Group I	7 - 90	NA	C
110	QQ	Hazardous waste trial burn	Group I	90 - 430	NA	C
111	RR	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	13.7 ± 0.4	-39	B
			Chloroform	13.3 ± 0.3	-42	
			Perchloroethylene	69.9 ± 1.7	-54	
			Benzene	46.6 ± 1.5	-27	
			Vinyl Chloride	31.3 ± 1.0	-20	
112	W	Hazardous waste trial burn	Carbon Tetrachloride	10.5 ± 0.3	+10	B
			Chloroform	40.5 ± 0.9	+14	
			Perchloroethylene	11.2 ± 0.3	+3	
			Benzene	19.7 ± 0.6	+41	
			Vinyl Chloride	19.4 ± 0.6	+8	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
113	W	Hazardous waste trial burn	Acetonitrile	37.3 ± 2.6	-59	B
			Methyl Ethyl Ketone	17.7 ± 0.9	-56	
			Trichloroethylene	41.9 ± 2.1	+32	
			1,2-Dichloroethane	38.0 ± 2.0	+24	
			Trichlofluoromethane (F-11)	42.0 ± 1.3	-38	
			Bromomethane	25.4 ± 1.0	+43	
			1,2-Dibromoethane	22.2 ± 0.9	+75	
			1,1,1-Trichloroethane	21.2 ± 1.1	+22	
114	V	Ambient air monitoring method evaluation	Group I	7 - 90	NA	C
115	V	Ambient air monitoring method evaluation	Group II	7 - 90	NA	C
116	H	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	+40	B
			Perchloroethylene	9.0 ± 0.2	+22	
117	TT	Ambient air monitoring method evaluation	Trichloroethylene	13.2 ± 0.7	-31	B
			1,2-Dichloroethane	16.7 ± 0.9	-64	
			1,2-Dibromoethane	16.2 ± 0.7	-100	
			1,1,1-Trichloroethane	16.3 ± 0.9	-81	
118 (Lab A)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+28	B
			1,2-Dichloroethane	9.7 ± 0.5	+34	
			1,2-Dibromoethane	32.0 ± 1.3	+19	
			1,1,1-Trichloroethane	31.7 ± 1.7	-2	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
118 (Lab B–#1)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+1	B
			1,2-Dichloroethane	9.7 ± 0.5	+13	
			Trichlorofluoromethane	10.1 ± 0.3	+1	
			Bromomethane	30.0 ± 1.2	+33	
			Dichlorodifluoromethane	26.3 ± 1.0	+33	
			1,2-Dibromoethane	32.0 ± 1.3	+9	
			1,1,1-Trichloroethane	31.7 ± 1.7	+4	
118 (Lab B–#2)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	-2	B
			Trichlorofluoromethane	10.1 ± 0.3	+9	
			1,2-Dibromoethane	32.0 ± 1.3	+28	
			1,1,1-Trichloroethane	31.7 ± 1.7	+4	
118 (Lab C)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+10	B
			Trichlorofluoromethane	10.1 ± 0.3	-42	
			Dichlorodifluoromethane	26.3 ± 1.0	+12	
			1,2-Dibromoethane	32.0 ± 1.3	-38	
			1,1,1-Trichloroethane	31.7 ± 1.7	-12	
118 (Lab D)	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	30.0 ± 1.6	0	B
			Trichloroethylene	10.2 ± 0.5	+37	
			1,2-Dichloroethane	9.7 ± 0.5	+24	
			Trichlorofluoromethane	10.1 ± 0.3	+39	
			Bromomethane	30.0 ± 1.2	+43	
			1,2-Dibromoethane	32.0 ± 1.3	+19	
			1,1,1-Trichloroethane	31.7 ± 1.7	+23	
118 (Lab E)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+63	B
			1,2-Dichloroethane	9.7 ± 0.5	+47	
			Trichlorofluoromethane	10.1 ± 0.3	+53	
			Bromomethane	30.0 ± 1.2	+251	
			Dichlorodifluoromethane	26.3 ± 1.0	+43	
			1,2-Dibromethane	32.0 ± 1.3	+7	
			1,1,1-Trichloroethane	31.7 ± 1.7	-87	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
118 (Lab F)	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+30	B
			1,1,1-Trichloroethane	31.7 ± 1.7	-87	
119	USEPA Region III	Ambient air monitoring method evaluation	Vinyl Chloride	45.8 ± 1.5	+5	B
120	WW	Ambient air monitoring method evaluation	Acetonitrile	153.7 ± 10.6	-19	B
			Methyl Ethyl Ketone	167.2 ± 8.8	-76	
			Trichloroethylene	147.5 ± 7.2	+154	
			1,2-Dichloroethane	154.7 ± 8.0	-25	
			Dichlorodifluoromethane	160.7 ± 6.2	+3	
			1,1,1-Trichloroethane	152.1 ± 8.0	-16	
121	XX	Hazardous waste trial burn	Carbon Tetrachloride	310 ± 9.2	-7	B
122	XX	Hazardous waste trial burn	Toluene	11.6 ± 0.8	-11	B
123	TT	Ambient air monitoring method evaluation	Carbon Tetrachloride	56.9 ± 1.7	NA	C
124	YY	Hazardous waste trial burn	Group I	7 - 90	NA	C
125	YY	Hazardous waste trial burn	Group II	7 - 90	NA	C
126	ZZ	Ambient air monitoring method evaluation	Carbon Tetrachloride	13.7 ± 0.4	-27	B
			Chloroform	13.3 ± 0.3	-2	
			Perchloroethylene	69.9 ± 1.7	-38	
			Benzene	46.6 ± 1.5	+3	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
127	HH	Hazardous waste trial burn	Toluene	10.2 ± 0.7	-12	B
128	KK	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	7340 ± 222	+47	B
			Chloroform	9521 ± 203	+16	
			Perchloroethylene	4739 ± 115	-7	
			Benzene	4784 ± 152	+28	
			Vinyl Chloride	9142 ± 294	+37	
129	KK	Hazardous waste landfill emissions monitoring	1,2-Dichloroethane	154.7 ± 8.0	-56	B
			1,2-Dibromoethane	158.4 ± 6.6	-83	
			1,1,1-Trichloroethane	152.1 ± 8.0	-12	
130 (Lab A)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-3	B
			Chloroform	12.2 ± 0.3	-1	
			Perchloroethylene	13.6 ± 0.3	-15	
			Benzene	49.0 ± 1.6	+8	
130 (Lab B–#1)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-4	B
			Chloroform	12.2 ± 0.3	-7	
			Perchloroethylene	13.6 ± 0.3	-5	
			Benzene	49.0 ± 1.6	+9	
130 (Lab B–#2)	I	Ambient air monitoring method evaluation	Benzene	49.0 ± 1.6	-18	B
130 (Lab C)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-15	B
			Chloroform	12.2 ± 0.3	-17	
			Perchloroethylene	13.6 ± 0.3	-28	
			Benzene	49.0 ± 1.6	-4	
			Vinyl Chloride	45.8 ± 1.5	+4	

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
130 (Lab D)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-16	B
			Chloroform	12.2 ± 0.3	-16	
			Perchloroethylene	13.6 ± 0.3	-27	
			Benzene	49.0 ± 1.6	+3	
			Vinyl Chloride	45.8 ± 1.5	+7	
130 (Lab E)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-17	B
			Chloroform	12.2 ± 0.3	-9	
			Perchloroethylene	13.6 ± 0.3	-20	
			Benzene	49.0 ± 1.6	+18	
			Vinyl Chloride	45.8 ± 1.5	-8	
130 (Lab F)	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-12	B
			Chloroform	12.2 ± 0.3	+2	
			Perchloroethylene	13.6 ± 0.3	-53	
131	H	Hazardous waste trial burn	Group I	430 - 10,000	NA	C
132	W	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	+1	B
			Chloroform	8.1 ± 0.2	+22	
			Perchloroethylene	9.0 ± 0.2	+51	
			Benzene	39.1 ± 1.3	-27	
			Vinyl Chloride	50.3 ± 1.6	-53	
133	RR	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	14.4 ± 0.4	-24	B
			Chloroform	14.4 ± 0.3	-10	
			Perchloroethylene	70.1 ± 1.7	+3	
			Benzene	45.7 ± 1.5	+27	
			Vinyl Chloride	31.3 ± 1.0	+5	
134	UU	Ambient air monitoring method evaluation	Group I	7 - 90	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
135	UU	Ambient air monitoring method evaluation	Group II	7 - 90	NA	C
136	UU	Ambient air monitoring method evaluation	Group III	7 - 90	NA	C
137	O	Hazardous waste trial burn	Carbon Tetrachloride	70.0 ± 2.1	-21	B
138	O	Hazardous waste trial burn	Toluene	32.8 ± 2.3	-13	B
139	HH	Hazardous waste trial burn	Carbon Tetrachloride	10.5 ± 0.3	-3	B
140	Region VII	Ambient air monitoring method evaluation	Carbon Tetrachloride Chloroform Vinyl Chloride	1584 ± 48 844 ± 18 1585 ± 51	-4 +17 -8	B
141	Region VII	Ambient air monitoring method evaluation	Trichloroethylene 1,2-Dichloroethane Trichlorofluoromethane Dichlorodifluoromethane 1,1,1-Trichloroethane	29.5 ± 1.5 27.8 ± 1.4 32.9 ± 1.0 26.2 ± 1.0 29.8 ± 1.6	+28 +51 +5 +3 +39	B
142	Q	Hazardous waste trial burn	Group I	7 - 90	NA	C
143	AC	Hazardous waste trial burn	Group I	7 - 90	NA	C
144	VV	Hazardous waste trial burn	Carbon Tetrachloride	10.5 ± 0.3	-10	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
145	VV	Hazardous waste trial burn	Carbon Tetrachloride	310 ± 9.2	-6	B
146	AE	Ambient air monitoring method evaluation	Group I	90 - 430	NA	C
147	AE	Ambient air monitoring method evaluation	Group II	90 - 430	NA	C
148	AE	Ambient air monitoring method evaluation	Group III	90 - 430	NA	C
149	A	Hazardous waste trial burn	Group I	7 - 90	NA	C
150	A	Hazardous waste trial burn	Group I	430 - 10,000	NA	C
151	AH	Ambient air monitoring method evaluation (Method A)	Carbon Tetrachloride Benzene Vinyl Chloride	79 6 ± 2.3 75.6 ± 2.4 69.3 ± 2.2	-12 + 12 + 7	B
151	AH	Ambient air monitoring method evaluation (Method B)	Carbon Tetrachloride Chloroform Perchloroethylene	79.6 ± 2.3 72.2 ± 1.5 79.9 ± 2.0	-2 + 4 -10	B
152	AH	Ambient air monitoring method evaluation (Method A)	Carbon Tetrachloride Chloroform Perchloroethylene	134 ± 4.0 137 ± 4.4 151 ± 4.9	+ 8 + 35 + 15	B
		(Method B)	Carbon Tetrachloride Chloroform Perchloroethylene	134 ± 4.0 129 ± 2.7 139 ± 3.4	+ 10 + 16 -24	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
153	HH	Hazardous waste trial burn	Group I	7 - 90	NA	C
154	HH	Hazardous waste trial burn	Group II	7 - 90	NA	C
155	AI	Ambient air monitoring method evaluation	Group III	7 - 90	NA	C
156	AI	Ambient air monitoring method evaluation	Group II	7 - 90	NA	C
157	AI	Ambient air monitoring method evaluation	Group III	7 - 90	NA	C
158	X	Ambient air monitoring method evaluation	Group I	7 - 90	NA	C
159	AF	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene	291 ± 8.7 232 ± 4.9 365 ± 9.0 300 ± 9.7	-21 -25 -28 +23	B
160	AJ	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	21.4 ± 2.4 10.6 ± 0.6 20.6 ± 1.0 10.3 ± 0.5 29.4 ± 2.5	+12 +19 -5 +59 -46	B
161	AG	Hazardous waste trial burn	Carbon Tetrachloride	9.5 ± 2.6	-35	B
162	AG	Hazardous waste trial burn	Toluene Chlorobenzene	11.6 ± 0.8 11.7 ± 1.9	+3 +8	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
163	HH	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	46.0 ± 1.4	-76	B
			Chloroform	10.3 ± 0.2	-49	
			Perchloroethylene	10.7 ± 0.3	-87	
			Benzene	49.0 ± 1.6	-80	
			Vinyl Chloride	50.1 ± 1.6	-18	
164	HH	Hazardous waste landfill emissions monitoring	Trichloroethylene	13.2 ± 0.7	-68	B
			1,2-Dichloroethane	16.7 ± 0.9	-34	
			Bromomethane	12.6 ± 0.5	+27	
			1,2-Dibromoethane	16.2 ± 0.7	-43	
			1,1,1-Trichloroethane	16.3 ± 0.9	-58	
165A	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+7	B
			1,2-Dichloroethane	10.5 ± 0.5	-7	
			1,2-Dibromoethane	31.8 ± 1.3	-16	
			1,1,1-Trichloroethane	33.9 ± 1.8	-14	
165B	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+6	B
			Trichlorofluoromethane	9.8 ± 0.3	+3	
			1,2-Dibromoethane	31.8 ± 1.3	+2	
			1,1,1-Trichloroethane	33.9 ± 1.8	-8	
165C	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	29.0 ± 1.5	0	B
			Trichloroethylene	10.1 ± 0.5	+2	
			Trichlorofluoromethane	9.8 ± 0.3	-6	
			Bromomethane	39.1 ± 1.6	-25	
			Dichlorodifluoromethane	27.7 ± 1.1	+6	
			1,2-Dibromoethane	31.8 ± 1.3	-24	
			1,1,1-Trichloroethane	33.9 ± 1.8	-39	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
165D	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	29.0 ± 1.5	+7	B
			Trichloroethylene	10.1 ± 0.5	-4	
			1,2-Dichloroethane	10.5 ± 0.5	-24	
			Trichlorofluoromethane	9.8 ± 0.3	+12	
			Bromomethane	39.1 ± 1.6	-2	
			Dichlorodifluoromethane	27.7 ± 1.1	-10	
			1,2-Dibromoethane	31.8 ± 1.3	-10	
			1,1,1-Trichloroethane	33.9 ± 1.8	-3	
165E	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+23	B
			1,2-Dichloroethane	10.5 ± 0.5	-31	
			Trichlorofluoromethane	9.8 ± 0.3	+28	
			Bromomethane	39.1 ± 1.6	+42	
			Dichlorodifluoromethane	27.7 ± 1.1	-43	
			1,2-Dibromoethane	31.8 ± 1.3	-43	
			1,1,1-Trichloroethane	33.9 ± 1.8	+17	
166A	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Carbon Tetrachloride	4308 ± 130	-52	B
			Perchloroethylene	6765 ± 164	-16	
			Benzene	3283 ± 104	-38	
			Vinyl Chloride	3122 ± 101	-67	
166B	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Carbon Tetrachloride	4308 ± 130	+7	B
			Perchloroethylene	6765 ± 164	-1	
			Benzene	3283 ± 104	+2	
			Vinyl Chloride	3122 ± 101	NA	
167A	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Trichloroethylene	142.8 ± 7.0	+19	B
			1,2-Dichloroethane	161.4 ± 8.3	-0.9	
			Trichlorofluoromethane (F11)	168.4 ± 5.3	+48	
			Bromomethane	178.1 ± 7.1	NA	
			1,2-Dibromoethane	205.8 ± 8.5	NA	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
167B	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Trichloroethylene	142.8 ± 7.0	-2	B
			1,2-Dichloroethane	161.4 ± 8.3	+12	
			Trichlorofluoromethane (F11)	168.4 ± 5.3	-29	
			Bromomethane	178.1 ± 7.1	-75	
			1,2-Dibromoethane	205.6 ± 8.5	-51	
168A	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Freon 113	143 ± 18	NA	B
			Vinylidene Chloride	123 ± 17	+2	
			Toluene	161 ± 11	+30	
			Chlorobenzene	152 ± 26	+126	
168B	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Freon 113	143 ± 18	+12	B
			Vinylidene Chloride	123 ± 17	-19	
			Toluene	161 ± 11	+18	
			Chlorobenzene	152 ± 26	-8	
169	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Methylene Chloride	5930 ± 248	-12,-4	B
170	AK	Hazardous waste trial burn	Acetonitrile	119 ± 8.3	+13	B
171	AK	Hazardous waste trial burn	Acrylonitrile	29.3 ± 2.0	+199	B
172	AL	Ambient air monitoring method evaluation	Carbon Tetrachloride	12.3 ± 0.4	-19	B
			Chloroform	48.3 ± 1.0	-9	
			Perchloroethylene	13.3 ± 0.3	-25	
			Benzene	24.6 ± 0.8	-31	
			Vinyl Chloride	21.1 ± 0.7	-10	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
173	AL	Ambient air monitoring method evaluation	Acetonitrile	9.3 ± 0.7	-100	B
			Trichloroethylene	8.6 ± 0.4	+6	
			1,2-Dichloroethane	10.5 ± 0.5	+6	
			Trichlorofluoromethane	9.4 ± 0.3	-14	
			Dichlorodifluoromethane	10.6 ± 0.4	-14	
			1,1,1-Trichloroethane	8.5 ± 0.4	+18	
174	AL	Ambient air monitoring method evaluation	Freon 114	142 ± 26	-13	B
			Freon 113	155 ± 20	-27	
			Vinylidene Chloride	157 ± 22	-23	
			Toluene	162 ± 11	-15	
			Chlorobenzene	161 ± 27	-8	
175	I	Ambient air monitoring method evaluation	Group I	90 - 430	NA	C
176	I	Ambient air monitoring method evaluation	Group II	90 - 430	NA	C
177A	I	Ambient air monitoring method evaluation	1,3-Butadiene	12.6 ± 1.7	-21	B
			Methylene Chloride	10.7 ± 1.1	-15	
177B	I	Ambient air monitoring method evaluation	1,3-Butadiene	12.6 ± 1.7	+3	B
			Methylene Chloride	10.7 ± 1.1	-32	
			Ortho-xylene	11.2 ± 1.1	+25	
177C	I	Ambient air monitoring method evaluation	Methylene Chloride	10.7 ± 1.1	-29	B
			Ortho-xylene	11.2 ± 1.1	+4	
177D	I	Ambient air monitoring method evaluation	Methylene Chloride	10.7 ± 1.1	-6	B
178	AM	Hazardous waste trial burn	Perchloroethylene	120 ± 2.9	-12	B

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
179	AM	Hazardous waste trial burn	Methylene Chloride	840 ± 35	-10	B
180	QQ	Hazardous waste trial burn	Chlorobenzene	28.5 ± 4.8	-8	B
181	W	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	291 ± 8.6 123 ± 2.6 104 ± 2.6 367 ± 11.8 416 ± 13.6	-74 -61 -52 -84 -32	B
182	RR	Hazardous waste landfill emissions monitoring	Acetonitrile Methyl Ethyl Ketone Trichloroethylene 1,2-Dichloroethane Trichlorofluoromethane Bromomethane Dichlorodifluoromethane 1,2-Dibromoethane 1,1,1-Trichloroethane	36.2 ± 2.5 18.0 ± 0.9 41.1 ± 2.1 40.7 ± 2.1 39.4 ± 1.2 24.5 ± 1.0 22.4 ± 0.8 22.7 ± 0.9 20.3 ± 1.1	-17 NA -10 +3 +17 NA +38 -10 -6	B
183	HH	Hazardous waste landfill emissions monitoring	Group III	7 - 90	NA	C
184	A	Hazardous waste trial burn	Group I	7 - 90	NA	C
185	O	Hazardous waste trial burn	Trichloroethylene	10.1 ± 0.5	+14	B
186	O	Hazardous waste trial burn	Toluene	10.2 ± 0.7	+3	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
187	A	Ambient air monitoring method evaluation	Group V	7 - 90	NA	C
188	QQ	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	37.2 ± 1.1 8.1 ± 0.2 9.0 ± 0.2 39.1 ± 1.3 50.1 ± 1.6	-13 -22 -11 -27 -44	B
189	AN	Hazardous waste trial burn	Perchloroethylene	10.1 ± 0.3	-22	B
190	AN	Hazardous waste trial burn	Group I	90 - 430	NA	C
191	JJ	Ambient air monitoring method evaluation	Group I	90 - 430	NA	C
192	JJ	Ambient air monitoring method evaluation	Group II	90 - 430	NA	C
193	KK	Ambient air monitoring method evaluation	Group I	430 - 10,000	-	A
194	KK	Ambient air monitoring method evaluation	Group IV	430 - 10,000	-	A
195	I	Ambient air monitoring method evaluation	Group V	7 - 90	-	A

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
196	A	Ambient air monitoring method evaluation (Method 1)	Chloroform	4.95 ± 0.6	+11	B
			Carbon Tetrachloride	4.67 ± 0.5	+50	
			Methylene Chloride	5.00 ± 0.6	+28	
			Trichloroethylene	5.61 ± 0.3	+11	
			Tetrachloroethylene	5.02 ± 0.3	-24	
			1,1,1-Trichloroethane	4.67 ± 0.3	+31	
196	I	Ambient air monitoring method evaluation (Method 2)	Chloroform	4.95 ± 0.6	-1	B
			Carbon Tetrachloride	4.67 ± 0.5	+5	
			Methylene Chloride	5.00 ± 0.6	-2	
			Trichloroethylene	5.61 ± 0.3	-25	
			Tetrachloroethylene	5.02 ± 0.3	-2	
			1,1,1-Trichloroethane	4.67 ± 0.3	+14	
197	A	Ambient air monitoring method evaluation	Chloroform	4.85 ± 0.3	-7.2	B
			Carbon Tetrachloride	4.99 ± 0.4	-7.8	
			Methylene Chloride	5.16 ± 0.6	-21.0	
			Trichloroethylene	5.47 ± 0.4	-15.9	
			Benzene	4.88 ± 0.3	-9.7	
			Tetrachloroethylene	5.13 ± 0.3	-2.5	
			1,1,1-Trichloroethane	10.0 ± 0.6	-13.5	
			1,2-Dichloropropane	10.3 ± 0.5	-25.2	
			Toluene	9.25 ± 0.5	-39.5	
			Chlorobenzene	9.92 ± 0.5	-16.8	
			Ortho-Xylene	12.0 ± 0.6	-25.4	
198	AD	Hazardous waste trial burn	Methyl Ethyl Ketone	12.7 ± 0.7	-47	B
			Trichloroethylene	8.6 ± 0.4	35	
			1,2-Dichloroethane	10.5 ± 0.5	-4	
			Trichlorofluoromethane	9.40 ± 0.3	+159	
			Bromomethane	10.1 ± 0.4	-64	
			Dichlorodifluoromethane	10.6 ± 0.4	-0.9	
			1,2-Dibromoethane	9.30 ± 0.4	+8	
			1,1,1-Trichloroethane	8.50 ± 0.4	+19	

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Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
199	AO	Hazardous waste trial burn	Carbon Tetrachloride	14.4 ± 0.4	-5	B
200	AO	Hazardous waste trial burn	Toluene	10.2 ± 0.7	-12	B
			Chlorobenzene	29.8 ± 5.0	-29	
201A	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	9.94 ± 0.6	-4	B
			1,2-Dichloroethane	9.90 ± 0.6	0	
			Trichloroethylene	10.8 ± 0.5	-7	
			Benzene	9.23 ± 0.6	+4	
			Tetrachloroethylene	10.5 ± 0.5	-12	
			1,1,1-Trichloroethane	5.12 ± 0.4	+13	
			1,2-Dibromoethane	5.50 ± 0.3	+4	
			Toluene	5.24 ± 0.3	+5	
			Ortho-xylene	5.48 ± 0.3	+13	
201B	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	9.94 ± 0.6	-20	B
			1,2-Dichloroethane	9.90 ± 0.6	-37	
			Trichloroethylene	10.8 ± 0.5	-15	
			Benzene	9.23 ± 0.6	+3	
			Tetrachloroethylene	10.5 ± 0.5	-17	
			1,1,1-Trichloroethane	5.12 ± 0.4	+2	
			1,2-Dibromoethane	5.50 ± 0.3	+13	
			Toluene	5.24 ± 0.3	+3	
			Ortho-xylene	5.48 ± 0.3	-12	
202	AP	Hazardous waste trial burn	Acetonitrile	12.8 ± 0.8	-92	B
			Trichloroethylene	15.6 ± 0.8	5	
			1,1,1-Trichloroethane	14.4 ± 0.8	11	
203	AK	Hazardous waste trial burn	Group II	90 - 430	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
204	AK	Hazardous waste trial burn	Group IV	430 - 10,000	NA	C
205	AA	Hazardous waste trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	10.8 ± 0.3 43.3 ± 0.9 10.6 ± 0.2 21.8 ± 0.7 19.7 ± 0.6	-25 -26 -35 -23 -8	B
206	W	Hazardous waste trial burn	Carbon Tetrachloride	20.7 ± 3.7	-33	B
207	W	Hazardous waste trial burn	Methyl Ethyl Ketone	12.7 ± 0.7	+21	B
208	W	Hazardous waste trial burn	Chlorobenzene	11.2 ± 1.8	+24	B
209	AQ	Ambient air monitoring method evaluation	Benzene	19.2 ± 0.6	-84	B
210	AQ	Ambient air monitoring method evaluation	Group II	7 - 90	NA	C
211	KK	Ambient air monitoring method evaluation	Group III	7 - 90	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
212	RR	Hazardous waste landfill ambient air monitoring	Vinyl Chloride	5.28 ± 0.7	-53	B
			Chloroform	5.10 ± 0.4	-35	
			Carbon Tetrachloride	5.00 ± 0.5	-40	
			Methylene Chloride	5.16 ± 0.8	-48	
			1,2-Dichloroethane	5.21 ± 0.4	-39	
			Trichloroethylene	5.83 ± 0.4	-38	
			Benzene	4.23 ± 0.3	-48	
			Tetrachloroethylene	5.21 ± 0.3	-42	
			1,3-Butadiene	5.75 ± 0.7	-53	
			Trichlorofluoromethane (F-11)	4.86 ± 0.8	-26	
			1,1,1-Trichloroethane	5.20 ± 0.5	-37	
			1,2-Dibromoethane	5.16 ± 0.3	-48	
			Toluene	5.07 ± 0.3	-41	
			Chlorobenzene	5.20 ± 0.3	-56	
			Ethylbenzene	4.79 ± 0.3	-37	
			Ortho-xylene	5.10 ± 0.3	-49	
213	AS	Ambient air monitoring method evaluation	Carbon Tetrachloride	10.7 ± 1.1	+7	B
			Chloroform	15.5 ± 1.9	+68	
			Vinyl Chloride	15.0 ± 1.2	+5	
213	AS	Ambient air monitoring method evaluation	Carbon Tetrachloride	10.7 ± 1.1	+21	B
			Chloroform	15.5 ± 1.9	+39	
214	AL	Hazardous waste landfill ambient air monitoring	Perchloroethylene	3230 ± 95	+0.3	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
215	HH	Hazardous waste landfill method evaluation	Carbon Tetrachloride	11.1 ± 1.3	-10	B
			Chloroform	22.5 ± 0.7	-7	
			Perchloroethylene	7.60 ± 0.7	-21	
			Benzene	29.1 ± 1.7	-11	
			Vinyl Chloride	21.5 ± 1.9	+3	
216	HH	Hazardous waste landfill method evaluation	Trichloroethylene	28.2 ± 0.9	-8	B
			1,2-Dichloroethane	28.3 ± 0.9	-1	
			Bromomethane	30.1 ± 1.3	+23	
			1,2-Dibromoethane	30.9 ± 1.2	-29	
			1,1,1-Trichloroethane	28.9 ± 0.9	+0.3	
217	HH	Hazardous waste landfill method evaluation	Acetone	8.70 ± 2.7	-54	B
			1,4-Dioxane	10.8 ± 3.5	-54	
			Toluene	11.1 ± 0.8	-19	
			Chlorobenzene	10.8 ± 1.7	-26	
218	AT	Hazardous waste trial burn	Carbon Tetrachloride	20.8 ± 2.0	+70	B
			Chloroform	10.3 ± 0.3	+50	
			Perchloroethylene	20.3 ± 0.6	-1	
			Benzene	10.4 ± 0.5	+38	
			Vinyl Chloride	30.3 ± 2.1	+9	
219	AT	Hazardous waste trial burn	Group II	7 - 90	NA	C
220	AT	Hazardous waste trial burn	Group III	7 - 90	NA	C
221	O	Hazardous waste trial burn	Carbon Tetrachloride	10.1 ± 1.0	-10	B
222	O	Hazardous waste trial burn	Toluene	11.6 ± 0.75	-19	B

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
223	I	Ambient air monitoring method evaluation	Group V	7 - 90	NA	A
224	AG	Hazardous waste trial burn	Trichlorofluoromethane (F11)	16.9 ± 1.4	-10	B
225	A	Ambient air monitoring method evaluation	Chloroform	4.90 ± 0.3	-33	B
			Carbon Tetrachloride	4.67 ± 0.3	-10	
			Methylene Chloride	5.00 ± 0.3	-56	
			1,2-Dichloroethane	4.90 ± 0.3	-14	
			Trichloroethylene	5.61 ± 0.4	-47	
			Benzene	4.18 ± 0.3	+20	
			Tetrachloroethylene	5.02 ± 0.3	+21	
			Bromomethane	5.42 ± 0.6	-35	
			1,1,1-Trichloroethane	4.67 ± 0.3	-21	
			1,2-Dichloropropane	4.81 ± 0.3	-13	
			Toluene	4.60 ± 0.3	+76	
			Chlorobenzene	4.91 ± 0.3	+67	
			Ethylbenzene	4.81 ± 0.3	+46	
			Ortho-xylene	5.10 ± 0.3	+86	
226	AU	Hazardous waste trial burn	Carbon Tetrachloride	9.45 ± 0.3	+67	B
			Chloroform	40.6 ± 0.9	-38	
			Benzene	19.2 ± 0.6	+5	
227	Q	Ambient air monitoring method evaluation	Carbon Tetrachloride	21.1 ± 2.0	-29	B
			Chloroform	10.2 ± 0.3	-5	
			Perchloroethylene	20.6 ± 0.6	-19	
			Benzene	10.0 ± 0.5	-10	
			Vinyl Chloride	27.0 ± 1.9	-10	
228	AV	Hazardous waste landfill method evaluation	Group I	7 - 90	-	A

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
229	AW	Ambient air monitoring method evaluation	Perchloroethylene	10.9 ± 0.3	-15	B
230	AW	Ambient air monitoring method evaluation	Perchloroethylene	400 ± 19.0	+10	B
231	A	Hazardous waste landfill ambient air monitoring	Trichloroethylene	9.20 ± 0.3	+39	B
			1,2-Dichloroethane	8.98 ± 0.3	+66	
			Trichlorofluoromethane (F-11)	9.60 ± 0.8	+443	
232	A	Hazardous waste landfill ambient air monitoring	Freon 114	7.20 ± 1.3	-58	B
			Freon 113	11.3 ± 1.4	+53	
			Vinylidene Chloride	12.8 ± 1.8	-28	
			Toluene	31.4 ± 2.2	+12	
			Chlorobenzene	30.2 ± 4.8	+6	
233	A	Hazardous waste landfill ambient air monitoring	Vinyl Chloride	9.94 ± 1.62	+17	B
			Chloroform	10.7 ± 1.05	+27	
			Carbon Tetrachloride	10.6 ± 1.66	+20	
			Methylene Chloride	10.6 ± 1.25	-80	
			1,2-Dichloroethane	10.6 ± 0.88	+41	
			Trichloroethylene	11.4 ± 0.88	+21	
			Benzene	10.1 ± 1.78	+47	
			Tetrachloroethylene	10.0 ± 1.09	+24	
			Trichlorofluoromethane (F-11)	5.52 ± 0.92	+364	
			1,1,1-Trichloroethane	5.30 ± 0.70	+15	
			Toluene	5.31 ± 0.75	+49	
			Chlorobenzene	5.75 ± 0.97	+109	
			Ortho-xylene	5.98 ± 5.05	+98	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
233 (Reanalysis)	A	Hazardous waste landfill ambient air monitoring	Vinyl Chloride	9.94 ± 1.62	-55	B
			Chloroform	10.7 ± 1.05	-51	
			Carbon Tetrachloride	10.6 ± 1.66	-73	
			Methylene Chloride	10.6 ± 1.25	-45	
			1,2-Dichloroethane	10.6 ± 0.88	-58	
			Trichloroethylene	11.4 ± 0.88	-51	
			Benzene	10.1 ± 1.78	-24	
			Tetrachloroethylene	10.0 ± 1.09	-69	
			Trichlorofluoromethane (F-11)	5.52 ± 0.92	-64	
			1,1,1-Trichloroethane	5.30 ± 0.70	+11	
			Toluene	5.31 ± 0.75	-49	
			Chlorobenzene	5.75 ± 0.97	-55	
			Ortho-xylene	5.98 ± 5.05	-65	
234	A	Ambient air monitoring method evaluation	Chloroform	10.40 ± 1.22	-47	B
			Carbon Tetrachloride	10.20 ± 0.84	-44	
			Methylene Chloride	10.20 ± 0.74	-54	
			1,2-Dichloroethane	10.30 ± 2.06	-48	
			Trichloroethylene	11.10 ± 0.74	-55	
			Benzene	9.77 ± 1.74	-36	
			Tetrachloroethylene	9.69 ± 0.92	-41	
			1,1,1-Trichloroethane	5.16 ± 0.80	-38	
			1,2-Dichloropropane	5.50 ± 0.55	-55	
			Toluene	5.30 ± 0.32	-11	
			Ethylbenzene	5.20 ± 0.55	-50	
			Ortho-xylene	5.34 2.13	-53	
			Chlorobenzene	5.44 ± 0.61	-49	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
234	A	Ambient air monitoring method evaluation	Vinyl chloride	9.88 ± 1.14	-41	B
			Chloroform	10.40 ± 1.22	-38	
			Carbon Tetrachloride	10.20 ± 0.84	-25	
			Methylene Chloride	10.20 ± 0.74	-50	
			1,2-Dichloroethane	10.30 ± 2.06	-36	
			Trichloroethylene	11.10 ± 0.74	-29	
			Benzene	9.77 ± 1.74	-32	
			Tetrachloroethylene	9.69 ± 0.92	-20	
			Bromomethane	5.90 ± 0.74	-26	
			1,1,1-Trichloroethane	5.16 ± 0.80	-59	
			1,2-Dichloropropane	5.50 ± 0.55	-85	
			Toluene	5.30 ± 0.32	-80	
			Ortho-xylene	5.34 ± 2.13	-50	
			Chlorobenzene	5.44 ± 0.61	-71	
235	PP	Hazardous waste trial burn	Trichloroethylene	39.2 ± 1.2	-84	B
			1,2-Dichloroethane	39.8 ± 1.2	-46	
			Trichlorofluoromethane (F-11)	33.5 ± 2.9	-89 to -72	
			1,2-Dibromoethane	NA	NA	
			1,1,1-Trichloroethane	19.8 ± 0.6	-63	
236	AA	Hazardous waste trial burn	Group I	7 - 90	NA	C
237	RR	Hazardous waste landfill ambient air monitoring	Vinyl Chloride	10.7 ± 1.70	-38	B
			Chloroform	11.8 ± 0.88	-41	
			Carbon Tetrachloride	11.8 ± 1.29	-35	
			Methylene Chloride	12.1 ± 1.23	-46	
			1,2-Dichloroethane	11.8 ± 0.94	-44	
			Trichloroethylene	12.2 ± 0.89	-39	
			Benzene	12.1 ± 2.29	-46	
			Tetrachloroethylene	11.2 ± 0.85	-41	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
237 (con.)			1,3-Butadiene	NA	NA	
			1,1,1-Trichloroethane	4.25 ± 0.29	-36	
			1,2-Dibromoethane	4.38 ± 0.33	-52	
			Toluene	4.46 ± 0.29	-53	
			Chlorobenzene	4.31 ± 0.26	-47	
			Ortho-xylene	4.33 ± 0.63	-45	
238	A	Ambient air monitoring method evaluation	Group V	7 - 90		A
239	AD	Hazardous waste trial burn	Carbon Tetrachloride	75.9 ± 7.14	-0.7	B
			Chloroform	7.5 ± 7.14	-10	
			Perchloroethylene	78.3 ± 14.9	-75	
			Benzene	71.4 ± 8.98	+14	
			Vinyl Chloride	75.8 ± 19.2	-47	
240	A	Ambient air monitoring method evaluation	Group III	7 - 90		A
241	VV	Hazardous waste trial burn	Carbon Tetrachloride	10.4 ± 0.90	+2	B
			Chloroform	25.8 ± 2.31	+3	
			Perchloroethylene	8.05 ± 0.57	-6	
			Benzene	29.0 ± 2.45	-6	
			Vinyl Chloride	19.8 ± 1.27	-22	
242	AL	Hazardous waste landfill method evaluation	Group I	90 - 430	-	A
243	A	Hazardous waste landfill ambient air monitoring	Group I	90 - 430	-	A

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
244	RR	Hazardous waste landfill ambient air monitoring	Vinyl Chloride	9.88 ± 1.14	-0.2	B
			Chloroform	10.40 ± 1.22	+9	
			Carbon Tetrachloride	10.19 ± 0.84	+7	
			Methylene Chloride	10.25 ± 0.74	-8	
			1,2-Dichloroethane	10.33 ± 2.07	+5	
			Trichloroethylene	11.09 ± 0.74	-3	
			Benzene	9.77 ± 1.74	-3	
			Tetrachloroethylene	9.69 ± 0.92	-0.9	
			1,3-Butadiene	NA		
			1,1,1-Trichloroethane	5.16 ± 0.80	+16	
			1,2-Dibromoethane	5.47 ± 0.45	-10	
			Toluene	5.30 ± 0.32	-9	
			Chlorobenzene	5.44 ± 0.61	-0.7	
			Ortho-xylene	5.35 ± 2.14	-6	
245	AX	Hazardous waste trial burn	Carbon Tetrachloride	12.30 ± 0.89	+22	B
			Trichlorofluoromethane (F-11)	16.3 ± 5	+65	
246	AY	Hazardous waste trial burn	Group V	7 - 90	-	A
247	AY	Hazardous waste trial burn	Group I	7 - 90	-	A
248	AP	Hazardous waste trial burn	1,1,1-Trichloroethane	20.3 ± 0.6	+25	B
249	BA	Ambient air monitoring method evaluation	Group I	7 - 90	NA	C
250	BA	Ambient air monitoring method evaluation	Group II	7 - 90	NA	C

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
251	BA	Ambient air monitoring method evaluation	Group III	7 - 90	NA	C
252	KK	Hazardous waste trial burn	Carbon Tetrachloride	7.00 ± 0.72	-4.3	B
253	KK	Hazardous waste trial burn	Trichlorofluoromethane (F-11)	10.1 ± 0.3	-14	B
			Dichlorofluoromethane (F-12)	26.3 ± 1.0	+269	B
254	BG	Hazardous waste landfill method evaluation	Group I	90 - 430	-	A
255	BG	Hazardous waste landfill method evaluation	Group V	7 - 90	-	A
256	BC	Ambient air monitoring method evaluation	Trichloroethylene	41.1 ± 1.3	-12	B
257	BC	Ambient air monitoring method evaluation	Trichloroethylene	11.09 ± 0.74	-32	B
258	BD	Hazardous waste trial burn	Chlorobenzene Ethylbenzene	4.31 ± 0.26 4.21 ± 0.25	-7 +12	B
259	BD	Hazardous waste trial burn	Methyl Ethyl Ketone	135 ± 6.6	+19	B
260	BE	Hazardous waste trial burn	Group I	7 - 90	-	A

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
261	AA	Hazardous waste trial burn	Group III	7 - 90	NA	C
262	BE	Hazardous waste trial burn	Group I	7 - 90		A
263	BE	Hazardous waste trial burn	Group II	7 - 90		A
264	Q	Ambient air monitoring method evaluation	Vinyl Chloride	4.20 ± 0.33	-31	B
			Chloroform	3.94 ± 0.32	-26	
			Carbon Tetrachloride	4.00 ± 0.42	+73	
			Methylene Chloride	3.68 ± 0.35	-32	
			1,2-Dichloroethane	4.06 ± 0.30	-4	
			Trichloroethylene	4.24 ± 0.29	+12	
			Benzene	4.15 ± 0.31	+23	
			Tetrachloroethylene	4.20 ± 0.26	-29	
			Toluene	8.30 ± 0.48	-10	
			Ethylbenzene	7.48 ± 0.45	-1	
			Ortho-xylene	8.08 ± 0.48	-6	
264	Q	Ambient air monitoring method evaluation	Chloroform	3.94 ± 0.32	-2	B
			Carbon Tetrachloride	4.00 ± 0.42	+44	
			1,2-Dichloroethane	4.06 ± 0.30	+1	
			Trichloroethylene	4.24 ± 0.29	+12	
			Benzene	4.15 ± 0.31	+12	
			Tetrachloroethylene	4.20 ± 0.26	+12	
			1,1,1-Trichloroethane	8.42 ± 0.53	+59	
			1,2-Dichloropropane	8.24 ± 0.49	-5	
			1,2-Dibromoethane	7.85 ± 0.54	-13	
			Toluene	8.30 ± 0.48	+2	
			Chlorobenzene	7.99 ± 0.54	-2	
			Ethylbenzene	7.48 ± 0.45	+1	
			Ortho-xylene	8.08 ± 0.48	+2	

(continued)

Table 4. Summary of Performance Audit Results (continued)

Audit No.	Client*	Use of audit material	Audit material**	RTI audit conc. (ppb)	Client audit % bias (avg.)***	Status of audit****
265	BF	Hazardous waste trial burn	Group III	7 - 90	-	A
266	BG	Hazardous waste landfill method evaluation	Chloroform Benzene Vinyl Chloride	128 ± 2.7 136 ± 4.3 154 ± 5.0	+57 +49 +40	B
267	RR	Hazardous waste landfill method evaluation	Group V	7 - 90	-	A
268	BF	Hazardous waste trial burn	Group IV	7 - 90	-	A

*Whenever the auditee is known, an alphabetical letter is shown. Whenever the auditee is unknown or the audit is a self-audit, the name of the agency requesting the audit is shown.

**Group I, II, III, IV, and V compounds are listed in Table 1.

***Client % Bias = 100 x

$$\frac{\text{Client-Measured Concentration - RTI-Measured Concentration}}{\text{RTI-Measured Concentration}}$$

****Status Codes:
A = Audit not complete
B = Audit complete
C = Audit completed without results
NA = Not analyzed by auditee.

*****Audit of instrument calibration procedure.

SECTION 4
STABILITY STUDIES

An ideal calibration standard or audit material should be stable over its total time of usage. Such standards or materials may be considered stable if the results of reanalyses over time fall within the 95% confidence limits of the combined uncertainty for the preparation and analysis of the analyte concentrations.

The gas mixtures were generally analyzed twice by the manufacturer before shipment to RTI. These analyses were performed to verify that the components in the cylinder were stable at the manufacturing facility before shipment to RTI. The gas mixtures are then analyzed at RTI upon receipt from the specialty gas vendor to corroborate the vendor's analysis. The gas mixtures are again analyzed by RTI at 2 months, 6 months, 12 months, and on an annual basis thereafter following the initial RTI analysis to determine the long-term stability of the gas mixtures. The results of the analyses of the cylinder gases by the manufacturer and by RTI, along with the results for the RTI analysis of NBS primary standards, are summarized in the stability data tables shown in Appendix A.

Relative accuracies of the cylinder gas analyses for Group I, Group II, Group III, Group IV, and Group V compounds have been determined using NBS primary standards on each day of RTI analysis. The method used by NBS to estimate the total uncertainty of NBS primary standards at the 95% confidence level has been reported.[1] The NBS concentrations and their total uncertainties at 95% confidence limits for Group I, Group II, Group III, Group IV, and Group V compounds are included in the stability data tables in Appendix A. These primary standards have been assessed for stability by NBS, and no change in concentrations has been observed that has exceeded the 95% confidence limit of the concentrations. The NBS maintains a continued QA program for these primary standards in which reanalyses are conducted over time to verify that the concentrations have not changed.

An examination of the stability data for the cylinder gases in Appendix A shows that values for the Group I, Group II, and Group III compounds usually vary by less than 10% for 4 or 8 analyses over a 4-year period. This variation is predominantly due to the imprecision of the RTI measurement process. The possible sources of experimental error in the measurement process that contribute to this variability include: (1) the variability of the sampling injection technique used for analyses of the primary standards and the audit cylinders; and (2) the instrumental variability in operating and detector parameters. Each of these sources of variability contributes to the total uncertainty of the resulting data presented in Appendix A.

The procedure used for the determination of within-day measurement uncertainty (repeatability when NBS primary gas standards are used for calibration) is different than the procedure used when calibration was performed with permeation devices. The total uncertainty calculation procedure when using permeation devices was described in Status Report #3.[3] The total uncertainty for the measurements when calibration is with an NBS primary gas standard in the last analysis (1988) was estimated by linear summation of several sources of error. The total uncertainty determined for all the previous analyses (prior to 1988) using NBS primary gas standards was described in Status Report #4. These sources of error include:

1. NBS uncertainties associated with concentration values reported by NBS for the primary standard cylinder;
2. The error associated with peak area measurement of the NBS calibration cylinder;
3. The error associated with peak area measurement of the sample cylinder.

The analytical results are reported as the mean parts-per-billion value for three replicate injections of a given sample cylinder plus or minus the calculated total uncertainty in parts-per-billion. The total uncertainty at the 95% confidence limits is calculated as follows:

$$Ua = T \times Sa/(N_1)^{1/2} + T \times Sc/(N_2)^{1/2} + U_{NBS}$$

where:

Ua = total uncertainty at the 95% confidence level, percent
T = two-sided student "t" value for small sample statistics
Sa = relative standard deviation of sample cylinder area response, percent
Sc = relative standard deviation of the calibration cylinder area response, percent
N_1 = number of sample cylinder injections
N_2 = number of calibration cylinder injections
U_{NBS} = uncertainty in concentration of NBS primary standard cylinder used for calibration, percent.

In this manner, the total uncertainty at the 95% confidence limit is assigned to the concentration of each organic determined in the audit cylinder mixtures.

SECTION 5

SUMMARY AND CONCLUSIONS

Cylinder gases containing 29 gaseous organic compounds at parts-per-billion levels have been used successfully in audits to assess the relative accuracy of analytical systems, especially those used during hazardous waste trial burn tests and ambient air monitoring. The cylinder gases consist of mixtures of five, six, eight, nine, and eighteen organic compounds each. These mixtures were blended by a commercial specialty gas supplier in aluminum cylinders in a balance gas of nitrogen. The five component mixture (Group I) contains carbon tetrachloride, chloroform, tetrachloroethylene (perchloroethylene), vinyl chloride, and benzene. The nine component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane, methyl ethyl ketone, and 1,1,1-trichloroethane. The eight component mixture (Group III) includes pyridine*, vinylidene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The six component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and 0-xylene. The eighteen component mixture (Group V) includes vinyl chloride, chloroform, carbon tetrachloride, methylene chloride, 1,2-dichloroethane, trichloroethylene, benzene, tetrachloroethylene, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), 1,1,1-trichloroethane, 1,2-dichloropropane, 1,2-dibromoethane, toluene, chlorobenzene, ethylbenzene, and 0-xylene.

Stability studies for 29 compounds (Group I, Group II, Group III, Group IV, and Group V) have been performed to determine the feasibility of using them as audit materials. Results indicate that all of the organics tested (with the exception of ethylene oxide and propylene oxide at low concentration) are stable enough to be used as reliable audit materials.

Subsequent to completion of the stability studies, 268 performance audits have been initiated to date with Group I, Group II, Group III, Group IV, and Group V cylinders, and 249 are complete. Generally, the audit results are within ±50% of the audit concentrations measured by RTI.

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*Although Group III cylinders contain pyridine, the concentrations are not certified due to severe analytical difficulties.

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APPENDIX A

STABILITY STUDY FOR GROUP I COMPOUNDS
STABILITY STUDY FOR GROUP II COMPOUNDS
STABILITY STUDY FOR GROUP III COMPOUNDS
STABILITY STUDY FOR GROUP IV COMPOUNDS
STABILITY STUDY FOR GROUP V COMPOUNDS

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C1

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(305)	(302)	(305)	(305)	---
1st Analysis Date ppb	10/13/83 (300)	10/13/83 (220)	10/13/83 (317)	11/15/83 (269)	11/15/83 (310)
2nd Analysis Date ppb	12/14/83 (269)	12/14/83 (253)	12/14/83 (298)	12/12/83 (282)	12/12/83 (314)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (283 ± 8.5)	12/30/83 (222 ± 4.7)	12/30/83 (373 ± 9.0)	1/12/84 (289 ± 9.2)	1/12/84 (325 ± 10)
2nd RTI Analysis Day*** ppb	62 (300 ± 9.0)	62 (228 ± 4.8)	62 (375 ± 9.0)	62 (287 ± 9.2)	62 (328 ± 11)
3rd RTI Analysis Day*** ppb	241 (277 ± 8.3)	241 (221 ± 4.6)	241 (347 ± 8.3)	235 (304 ± 9.7)	235 (325 ± 10)
4th RTI Analysis Day*** ppb	404 (277 ± 8.3)	404 (224 ± 4.7)	404 (356 ± 8.5)	378 (286 ± 9.2)	378 (334 ± 11)
5th RTI Analysis Day*** ppb	on audit	on audit	on audit	(302 ± 9.7)	(319 ± 10)
6th RTI Analysis Day*** ppb	833 (279 ± 8.3)	833 (220 ± 4.7)	833 (359 ± 8.8)	810 (297 ± 9.6)	810 (338 ± 11)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	empty	empty	empty	empty	empty
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	NA	NA	NA	NA	NA
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C1

	COMPOUND				
ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	62 (192 ± 6.1)	62 (192 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day ppb	241 (156 ± 4.7)	241 (132 ± 2.8)	241 (147 ± 3.5)	235 (191 ± 6.1)	235 (191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	378 (200 ± 6.4)	378 (195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	500 (141 ± 4.2)	500 (115 ± 2.4)	500 (128 ± 3.1)	505 (139 ± 4.4)	505 (149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (166 ± 5.0)	833 (130 ± 2.7)	833 (144 ± 3.5)	810 (143 ± 4.6)	810 (156 ± 5.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.0)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1714 (155 ± 8.3)	1714 (129 ± 8.2)	1714 (138 ± 5.2)	1701 (144 ± 4.7)	1701 (162 ± 5.7)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C2

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(319)	(316)	(319)	(319)	---
1st Analysis Date ppb	10/13/83 (301)	10/13/83 (243)	10/13/83 (356)	12/12/83 (317)	12/12/83 (292)
2nd Analysis Date ppb	12/14/83 (295)	12/14/83 (258)	12/14/83 (342)	12/14/83 (294)	12/14/83 (293)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (315 ± 9.5)	12/30/83 (226 ± 4.7)	12/30/83 (425 ± 10)	1/12/84 (305 ± 9.8)	1/12/84 (295 ± 9.4)
2nd RTI Analysis Day*** ppb	62 (327 ± 9.8)	62 (233 ± 4.9)	62 (436 ± 11)	62 (314 ± 10)	62 (303 ± 9.7)
3rd RTI Analysis Day*** ppb	241 (305 ± 9.2)	241 (230 ± 4.8)	241 (406 ± 9.7)	235 (326 ± 10)	235 (304 ± 9.7)
4th RTI Analysis Day*** ppb	404 (305 ± 9.2)	404 (229 ± 4.8)	404 (407 ± 9.8)	378 (313 ± 10)	378 (309 ± 9.9)
5th RTI Analysis Day*** ppb	500 (306 ± 9.2)	500 (223 ± 4.7)	500 (398 ± 9.6)	502 (325 ± 10)	502 (308 ± 9.9)
6th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*** ppb	1350 (310 ± 22)	1350 (227 ± 9.0)	1350 (400 ± 19)	1350 (305 ± 27)	1350 (318 ± 31)
8th RTI Analysis Day*** ppb	1714 (314 ± 23)	1714 (238 ± 20)	1714 (419 ± 25)	1701 (302 ± 15)	1701 (301 ± 27)
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	NA	NA	NA	NA	NA
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C2

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL+					
2nd RTI Analysis Day	62	62	62	62	62
ppb	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day	241	241	241	235	235
ppb	(156 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	404	404	404	378	378
ppb	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	500	500	500	502	502
ppb	(141 ± 4.2)	(115 ± 2.4)	(128 ± 3.1)	(137 ± 4.4)	(145 ± 4.6)
NBS Concentration ppb	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.0)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1714	1714	1714	1701	1701
ppb	(155 ± 8.3)	(129 ± 8.2)	(138 ± 5.2)	(144 ± 4.7)	(162 ± 5.7)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C3

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(294)	(291)	(293)	(294)	(290)
1st Analysis Date ppb	10/13/83 (308)	10/13/83 (223)	10/13/83 (321)	11/15/83 (271)	11/15/83 (287)
2nd Analysis Date ppb	12/14/83 (272)	12/14/83 (256)	12/14/83 (299)	12/12/83 (284)	12/12/83 (290)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (287 ± 8.6)	12/30/83 (224 ± 4.7)	12/30/83 (373 ± 9.0)	1/12/84 (288 ± 9.2)	1/12/84 (295 ± 9.4)
2nd RTI Analysis Day*** ppb	62 (303 ± 9.1)	62 (234 ± 4.9)	62 (369 ± 8.9)	62 (289 ± 9.2)	62 (302 ± 9.7)
3rd RTI Analysis Day*** ppb	241 (283 ± 8.5)	241 (230 ± 4.8)	241 (352 ± 8.4)	235 (300 ± 9.6)	235 (306 ± 9.8)
4th RTI Analysis Day*** ppb	404 (280 ± 8.4)	404 (229 ± 4.8)	404 (354 ± 8.5)	378 (289 ± 9.2)	378 (308 ± 9.9)
5th RTI Analysis Day*** ppb	500 (281 ± 8.4)	500 (223 ± 4.7)	500 (347 ± 8.3)	502 (302 ± 9.7)	502 (308 ± 9.9)
6th RTI Analysis Day*** ppb	833 (291 ± 8.7)	833 (232 ± 4.9)	833 (365 ± 9.0)	810 (300 ± 9.7)	810 (312 ± 10)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	1714 (265 ± 22)	1714 (233 ± 20)	1714 (343 ± 32)	1701 (273 ± 12)	1701 (297 ± 15)
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	NA	NA	NA	NA	NA
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C3

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
	RTI QUALITY CONTROL +				
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	62 (192 ± 6.1)	62 (192 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day ppb	241 (156 ± 4.7)	241 (132 ± 2.8)	241 (147 ± 3.5)	235 (191 ± 6.1)	235 (191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	378 (200 ± 6.4)	378 (195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	500 (141 ± 4.2)	500 (155 ± 2.4)	500 (128 ± 3.1)	502 (137 ± 4.4)	502 (145 ± 4.6)
NBS Concentration ppb	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (166 ± 5.0)	833 (130 ± 2.7)	833 (144 ± 3.5)	810 (143 ± 4.6)	810 (156 ± 5.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.0)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1714 (138 ± 12)	1714 (119 ± 8.6)	1714 (127 ± 4.9)	1701 (132 ± 4.7)	1701 (149 ± 7.5)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C4

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(268)	(271)	(271)	(274)	(278)
1st Analysis Date ppb	12/09/83 (267)	12/09/83 (232)	12/09/83 (281)	12/02/83 (248)	12/02/83 (283)
2nd Analysis Date ppb	12/14/83 (256)	12/14/83 (241)	12/14/83 (259)	12/12/83 (262)	12/12/83 (287)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (270 ± 8.1)	12/30/83 (211 ± 4.4)	12/30/83 (308 ± 7.4)	1/12/84 (263 ± 8.4)	1/12/84 (291 ± 9.3)
2nd RTI Analysis Day*** ppb	62 (278 ± 8.3)	62 (214 ± 4.5)	62 (317 ± 7.6)	62 (263 ± 8.4)	62 (296 ± 9.5)
3rd RTI Analysis Day*** ppb	241 (267 ± 8.0)	241 (214 ± 4.5)	241 (299 ± 7.2)	235 (281 ± 9.0)	235 (300 ± 9.6)
4th RTI Analysis Day*** ppb	404 (266 ± 8.0)	404 (216 ± 4.5)	404 (311 ± 7.5)	378 (266 ± 8.5)	378 (301 ± 9.6)
5th RTI Analysis Day*** ppb	500 (265 ± 8.0)	500 (208 ± 4.4)	500 (295 ± 7.1)	502 (277 ± 8.9)	502 (302 ± 9.7)
6th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*** ppb	1350 (261 ± 7.9)	1350 (216 ± 4.6)	1350 (289 ± 7.0)	1350 (261 ± 8.1)	1350 (289 ± 9.3)
8th RTI Analysis Day*** ppb	1584 (263 ± 20)	1584 (224 ± 23)	1584 (309 ± 31)	1566 (259 ± 11)	1566 (331 ± 57)
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	NA	NA	NA	NA	NA
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C4

ACTIVITY	COMPOUND Carbon tetra-chloride	 Chloroform	 Perchloro-ethylene	 Benzene	 Vinyl chloride
RTI QUALITY CONTROL+					
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	62 (192 ± 6.1)	62 (192 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day ppb	241 (156 ± 4.7)	241 (132 ± 2.8)	241 (147 ± 3.5)	235 (191 ± 6.1)	235 (191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	378 (200 ± 6.4)	378 (195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	500 (141 ± 4.2)	500 (115 ± 2.4)	500 (128 ± 3.1)	502 (137 ± 4.4)	502 (145 ± 4.6)
NBS Concentration ppb	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (161 ± 4.8)	833 (132 ± 2.8)	833 (148 ± 3.6)	810 (139 ± 4.5)	810 (153 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1584 (159 ± 10)	1584 (136 ± 15)	1584 (150 ± 11)	1566 (194 ± 9.4)	1556 (201 ± 31)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C5

ACTIVITY	COMPOUND Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(133)	(132)	(133)	(134)	150
1st Analysis Date ppb	10/31/83 (122)	10/31/83 (123)	10/31/83 (124)	11/16/83 (127)	11/16/83 (143)
2nd Analysis Date ppb	12/10/83 (118)	12/10/83 (130)	12/10/83 (119)	12/13/83 (131)	12/13/83 (146)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (133 ± 4.1)	12/30/83 (125 ± 2.6)	12/30/83 (138 ± 3.3)	1/17/84 (132 ± 4.2)	1/17/84 (154 ± 4.9)
2nd RTI Analysis Day*** ppb	62 (139 ± 4.2)	62 (130 ± 2.7)	62 (144 ± 3.5)	54 (139 ± 4.4)	54 (152 ± 4.9)
3rd RTI Analysis Day*** ppb	242 (132 ± 4.0)	242 (129 ± 2.7)	242 (136 ± 3.3)	230 (146 ± 4.7)	230 (153 ± 4.9)
4th RTI Analysis Day*** ppb	404 (124 ± 3.7)	404 (125 ± 2.6)	404 (135 ± 3.2)	374 (140 ± 4.5)	374 (154 ± 4.9)
5th RTI Analysis Day*** ppb	501 (132 ± 4.0)	501 (128 ± 2.7)	501 (137 ± 3.3)	498 (139 ± 4.4)	498 (154 ± 4.9)
6th RTI Analysis Day*** ppb	833 (137 ± 4.1)	833 (132 ± 2.8)	833 (142 ± 3.5)	810 (137 ± 4.4)	810 (149 ± 4.9)
7th RTI Analysis Day*** ppb	1350 (133 ± 4.0)	1350 (132 ± 2.8)	1350 (139 ± 3.4)	1350 (134 ± 4.3)	1350 (152 ± 5.0)
8th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	--- NA	--- NA	--- NA	1/17/84 (135)	1/17/84 (155)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C5

ACTIVITY	COMPOUND Carbon tetra-chloride	 Chloroform	 Perchloro-ethylene	 Benzene	 Vinyl chloride
	RTI QUALITY CONTROL +				
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	54 (141 ± 4.5)	54 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day ppb	242 (157 ± 4.7)	242 (133 ± 2.8)	242 (144 ± 3.5)	230 (147 ± 4.7)	230 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	374 (147 ± 4.7)	374 (152 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	501 (142 ± 4.3)	501 (115 ± 2.4)	501 (126 ± 3.0)	498 (139 ± 4.4)	498 (154 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (161 ± 4.8)	833 (132 ± 2.8)	833 (148 ± 3.6)	810 (139 ± 4.5)	810 (153 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1703 (140 ± 17)	1703 (123 ± 27)	1703 (126 ± 23)	1692 (135 ± 13)	1692 (155 ± 20)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 7.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C6

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(134)	(133)	(134)	(135)	(150)
1st Analysis Date	10/31/83	10/31/83	10/31/83	11/16/83	11/16/83
ppb	(126)	(126)	(128)	(128)	(142)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/12/83	12/12/83
ppb	(115)	(129)	(114)	(133)	(143)
RTI ANALYSIS**					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
ppb	(134 ± 4.0)	(124 ± 2.6)	(137 ± 3.3)	(136 ± 4.4)	(155 ± 5.0)
2nd RTI Analysis Day***	62	62	62	54	54
ppb	(137 ± 4.1)	(128 ± 2.7)	(140 ± 3.4)	(138 ± 4.4)	(150 ± 4.8)
3rd RTI Analysis Day***	242	242	242	230	230
ppb	(131 ± 3.9)	(129 ± 2.7)	(135 ± 3.2)	(147 ± 4.7)	(152 ± 4.9)
4th RTI Analysis Day***	404	404	404	374	374
ppb	(129 ± 3.9)	(126 ± 2.6)	(135 ± 3.2)	(140 ± 4.5)	(148 ± 4.7)
5th RTI Analysis Day***	501	501	501	498	498
ppb	(132 ± 4.0)	(128 ± 2.7)	(137 ± 3.3)	(138 ± 4.4)	(153 ± 4.9)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(134 ± 4.0)	(129 ± 2.7)	(137 ± 3.4)	(139 ± 4.5)	(151 ± 4.9)
7th RTI Analysis Day***	1350	1350	1350	1350	1350
ppb	(133 ± 4.0)	(128 ± 2.7)	(135 ± 3.3)	(136 ± 4.3)	(154 ± 5.0)
8th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
RTI QUALITY CONTROL +					
1st RTI Analysis Date	---	---	---	1/17/84	1/17/84
ppb	NA	NA	NA	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C6

ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
	COMPOUND				
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	62	62	62	54	54
ppb	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(141 ± 4.5)	(153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day	242	242	242	230	230
ppb	(157 ± 4.7)	(133 ± 2.8)	(144 ± 3.5)	(147 ± 4.7)	(153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	404	404	404	374	374
ppb	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(147 ± 4.7)	(152 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	501	501	501	498	498
ppb	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(154 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(161 ± 4.8)	(132 ± 2.8)	(148 ± 3.6)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1703	1703	1703	1692	1692
ppb	(140 ± 17)	(123 ± 27)	(126 ± 23)	(135 ± 13)	(155 ± 20)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 7.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C7

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(134)	(132)	(133)	(134)	(150)
1st Analysis Date	10/31/83	10/31/83	10/31/83	12/01/83	12/01/83
ppb	(122)	(124)	(124)	(127)	(146)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/13/83	12/13/83
ppb	(117)	(126)	(113)	(131)	(143)
RTI ANALYSIS**					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
ppb	(132 ± 4.0)	(125 ± 2.6)	(139 ± 3.3)	(132 ± 4.2)	(155 ± 5.0)
2nd RTI Analysis Day***	62	62	62	54	54
ppb	(135 ± 4.1)	(127 ± 2.7)	(142 ± 3.4)	(138 ± 4.4)	(152 ± 4.9)
3rd RTI Analysis Day***	242	242	242	230	230
ppb	(133 ± 4.0)	(129 ± 2.7)	(135 ± 3.2)	(145 ± 4.6)	(154 ± 4.9)
4th RTI Analysis Day***	404	404	404	374	374
ppb	(128 ± 3.8)	(125 ± 2.6)	(140 ± 3.4)	(141 ± 4.5)	(156 ± 5.0)
5th RTI Analysis Day***	501	501	501	498	498
ppb	(131 ± 3.9)	(125 ± 2.6)	(137 ± 3.3)	(137 ± 4.4)	(156 ± 5.0)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(134 ± 4.0)	(129 ± 2.7)	(139 ± 3.4)	(137 ± 4.4)	(151 ± 4.9)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1679	1679	1679	1661	1661
ppb	(131 ± 8.0)	(132 ± 11)	(145 ± 12)	(137 ± 7.1)	(153 ± 15)
RTI QUALITY CONTROL+					
1st RTI Analysis Date	---	---	---	1/17/84	1/17/84
ppb	NA	NA	NA	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C7

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL+					
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	54 (141 ± 4.5)	54 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day ppb	242 (157 ± 4.7)	242 (133 ± 2.8)	242 (144 ± 3.5)	230 (147 ± 4.7)	230 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	374 (147 ± 4.7)	374 (152 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	501 (142 ± 4.3)	501 (115 ± 2.4)	501 (126 ± 3.0)	498 (139 ± 4.4)	498 (154 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (161 ± 4.8)	833 (132 ± 2.8)	833 (148 ± 3.6)	810 (139 ± 4.5)	810 (153 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1679 (155 ± 8.3)	1679 (129 ± 8.2)	1679 (138 ± 5.2)	1661 (144 ± 4.7)	1661 (162 ± 5.7)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C8

ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
	COMPOUND				
MANUFACTURER ANALYSIS					
Theoretical ppb	(128)	(126)	(127)	(128)	(150)
1st Analysis Date ppb	10/31/83 (117)	10/31/83 (119)	10/31/83 (125)	11/16/83 (121)	11/16/83 (147)
2nd Analysis Date ppb	12/10/83 (113)	12/10/83 (126)	12/10/83 (116)	12/13/83 (125)	12/13/83 (148)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	12/30/83 (127 ± 3.8)	12/30/83 (119 ± 2.5)	12/30/83 (131 ± 3.1)	1/17/84 (127 ± 4.1)	1/17/84 (158 ± 5.1)
2nd RTI Analysis Day*** ppb	62 (131 ± 3.9)	62 (122 ± 2.6)	62 (134 ± 3.2)	54 (133 ± 4.3)	54 (154 ± 4.9)
3rd RTI Analysis Day*** ppb	242 (127 ± 3.8)	242 (123 ± 2.6)	242 (129 ± 3.1)	230 (140 ± 4.5)	230 (153 ± 4.9)
4th RTI Analysis Day*** ppb	404 (124 ± 3.7)	404 (117 ± 2.5)	404 (131 ± 3.1)	374 (143 ± 4.6)	374 (154 ± 4.9)
5th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
6th RTI Analysis Day*** ppb	833 (129 ± 3.8)	833 (123 ± 2.6)	833 (131 ± 3.2)	810 (130 ± 4.2)	810 (153 ± 5.0)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	1677 (120 ± 7.7)	1677 (123 ± 7.6)	1677 (130 ± 6.2)	1659 (125 ± 4.4)	1659 (153 ± 7.2)
RTI QUALITY CONTROL+					
1st RTI Analysis Date ppb	--- NA	--- NA	--- NA	1/17/84 (135 ± 4.3)	1/17/84 (155 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C8

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day ppb	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	54 (141 ± 4.5)	54 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day ppb	242 (157 ± 4.7)	242 (133 ± 2.8)	242 (144 ± 3.5)	230 (147 ± 4.7)	230 (153 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day ppb	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	374 (147 ± 4.7)	374 (152 ± 4.9)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	501 (142 ± 4.3)	501 (115 ± 2.4)	501 (126 ± 3.0)	498 (139 ± 4.4)	498 (154 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (161 ± 4.8)	833 (132 ± 2.8)	833 (148 ± 3.6)	810 (139 ± 4.5)	810 (153 ± 5.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1677 (138 ± 12)	1677 (119 ± 8.6)	1677 (127 ± 4.8)	1659 (132 ± 4.7)	1659 (149 ± 7.5)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C9

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(70.8)	(70.0)	(70.6)	(71.0)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/28/83	11/28/83
ppb	(72.5)	(68.9)	(72.7)	(67.2)	(70.6)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
ppb	(68.3)	(72.3)	(69.8)	(73.1)	(69.6)
RTI ANALYSIS**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(72.8 ± 2.2)	(65.3 ± 1.4)	(74.6 ± 1.8)	(76.2 ± 2.4)	(72.9 ± 2.3)
2nd RTI Analysis Day***	58	58	58	51	51
ppb	(73.7 ± 2.2)	(68.6 ± 1.4)	(76.2 ± 1.8)	(73.2 ± 2.3)	(73.1 ± 2.3)
3rd RTI Analysis Day***					
ppb	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day***					
ppb	on audit	on audit	on audit	on audit	on audit
5th RTI Analysis Day***	497	497	497	499	499
ppb	(71.7 ± 2.2)	(68.8 ± 1.4)	(71.6 ± 1.7)	(72.6 ± 2.3)	(71.0 ± 2.3)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(79.6 ± 2.3)	(72.2 ± 1.5)	(79.6 ± 2.0)	(75.6 ± 2.4)	(69.3 ± 2.2)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1752	1752	1752	1739	1739
ppb	(72.8 ± 4.2)	(66.8 ± 3.9)	(74.9 ± 5.0)	(71.7 ± 4.2)	(73.7 ± 4.5)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C9

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
		RTI QUALITY CONTROL +			
2nd RTI Analysis Day	58	58	58	51	51
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	240	240	240	231	231
ppb	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	401	401	401	377	377
ppb	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day	497	497	497	499	499
ppb	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1752	1752	1752	1739	1739
ppb	(5.10 ± 0.9)	(5.17 ± 0.4)	(5.47 ± 0.4)	(5.34 ± 0.4)	(4.70 ± 0.5)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C10

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(66.0)	(65.2)	(65.8)	(66.2)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/28/83	11/28/83
ppb	(65.2)	(64.8)	(67.9)	(61.0)	(70.1)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
ppb	(62.5)	(66.1)	(64.6)	(66.0)	(67.5)
RTI ANALYSIS**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(66.5 ± 2.0)	(58.6 ± 1.2)	(67.7 ± 1.6)	(68.7 ± 2.2)	(71.3 ± 2.3)
2nd RTI Analysis Day***	58	58	58	51	51
ppb	(65.8 ± 2.0)	(60.6 ± 1.3)	(68.4 ± 1.6)	(66.4 ± 2.1)	(71.5 ± 2.3)
3rd RTI Analysis Day***	240	240	240	231	231
ppb	(67.6 ± 2.0)	(64.6 ± 1.4)	(69.4 ± 1.7)	(72.0 ± 2.3)	(71.6 ± 2.3)
4th RTI Analysis Day***	401	401	401	377	377
ppb	(65.2 ± 2.0)	(63.6 ± 1.3)	(71.7 ± 1.7)	(70.4 ± 2.3)	(68.5 ± 2.2)
5th RTI Analysis Day***	497	497	497	499	499
ppb	(64.0 ± 1.9)	(62.7 ± 1.3)	(64.3 ± 1.5)	(66.0 ± 2.1)	(69.0 ± 2.2)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(70.0 ± 2.1)	(64.3 ± 1.4)	(72.3 ± 1.8)	(68.2 ± 2.2)	(71.7 ± 2.3)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C10

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	58	58	58	51	51
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	240	240	240	231	231
ppb	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	401	401	401	377	377
ppb	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day	497	497	497	499	499
ppb	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1700	1700	1700	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C11

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
			MANUFACTURER ANALYSIS		
Theoretical					
ppb	(66.6)	(65.8)	(66.3)	(66.7)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	12/02/83	12/02/83
ppb	(65.4)	(62.4)	(65.5)	(61.7)	(66.5)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
ppb	(62.3)	(65.1)	(64.8)	(65.3)	(67.7)
			RTI ANALYSIS**		
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(66.5 ± 2.0)	(58.1 ± 1.2)	(66.4 ± 1.6)	(67.4 ± 2.2)	(69.7 ± 2.2)
2nd RTI Analysis Day***	58	58	58	51	51
ppb	(67.5 ± 2.0)	(60.5 ± 1.3)	(70.0 ± 1.7)	(64.8 ± 2.1)	(69.2 ± 2.2)
3rd RTI Analysis Day***	240	240	240	231	231
ppb	(68.2 ± 2.0)	(64.6 ± 1.4)	(69.6 ± 1.7)	(71.1 ± 2.3)	(69.8 ± 2.2)
4th RTI Analysis Day***	401	401	401	377	377
ppb	(65.2 ± 2.0)	(63.6 ± 1.3)	(71.7 ± 1.7)	(70.4 ± 2.3)	(68.5 ± 2.2)
5th RTI Analysis Day***	497	497	497	499	499
ppb	(65.3 ± 2.0)	(62.7 ± 1.3)	(63.5 ± 1.5)	(69.1 ± 2.2)	(68.7 ± 2.2)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(70.8 ± 2.1)	(60.3 ± 1.3)	(70.1 ± 1.7)	(69.9 ± 2.2)	(69.3 ± 2.2)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
			RTI QUALITY CONTROL +		
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
ppb	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C11

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
	RTI QUALITY CONTROL +				
2nd RTI Analysis Day	58	58	58	51	51
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	240	240	240	231	231
ppb	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	401	401	401	377	377
ppb	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day	497	497	497	499	499
ppb	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1700	1700	1700	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C12

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(75.3)	(74.4)	(75.1)	(75.6)	(70.0)
1st Analysis Date ppb	10/31/83 (73.4)	10/31/83 (73.5)	10/31/83 (74.1)	11/28/83 (71.0)	11/28/83 (70.1)
2nd Analysis Date ppb	12/12/83 (72.1)	12/12/83 (74.2)	12/12/83 (73.6)	12/13/83 (76.4)	12/13/83 (68.9)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	1/04/84 (76.0 ± 2.3)	1/04/84 (70.7 ± 1.5)	1/04/84 (80.7 ± 1.9)	1/17/84 (79.0 ± 2.5)	1/17/84 (72.9 ± 2.3)
2nd RTI Analysis Day*** ppb	58 (77.0 ± 2.3)	58 (71.8 ± 1.5)	58 (80.4 ± 1.9)	51 (76.6 ± 2.5)	51 (72.1 ± 2.3)
3rd RTI Analysis Day*** ppb	240 (79.1 ± 2.4)	240 (75.3 ± 1.6)	240 (81.7 ± 2.0)	231 (82.3 ± 2.6)	231 (73.4 ± 2.3)
4th RTI Analysis Day*** ppb	401 (74.5 ± 2.2)	401 (72.6 ± 1.5)	401 (80.7 ± 1.9)	377 (79.0 ± 2.5)	377 (71.3 ± 2.3)
5th RTI Analysis Day*** ppb	497 (74.0 ± 2.2)	497 (70.9 ± 1.5)	497 (73.3 ± 1.8)	499 (74.6 ± 2.4)	499 (70.4 ± 2.3)
6th RTI Analysis Day*** ppb	empty	empty	empty	empty	empty
RTI QUALITY CONTROL $^+$					
1st RTI Analysis Date ppb	1/04/84 (144 ± 4.3)	1/04/84 (114 ± 2.4)	1/04/84 (127 ± 3.0)	1/17/84 (135 ± 4.3)	1/17/84 (155 ± 5.0)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
2nd RTI Analysis Day ppb	58 (147 ± 4.4)	58 (116 ± 2.4)	58 (134 ± 3.2)	51 (17.0 ± 0.5)	51 (15.0 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C12

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
3rd RTI Analysis Day ppb	240 (146 ± 4.4)	240 (120 ± 2.5)	240 (131 ± 3.1)	231 (146 ± 4.7)	231 (152 ± 4.9)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day ppb	401 (142 ± 4.3)	401 (120 ± 2.5)	401 (127 ± 3.0)	377 (136 ± 4.4)	377 (150 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day ppb	497 (141 ± 4.2)	497 (116 ± 2.4)	497 (129 ± 3.1)	497 (136 ± 4.4)	497 (149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (144 ± 4.3)	833 (119 ± 2.5)	833 (135 ± 3.3)	810 (16.9 ± 0.5)	810 (14.7 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

* Permeation tubes were used for calibration for all analyses.

** Analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C13

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(15.4)	(15.3)	(15.6)	(15.6)	(15.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/29/83	11/29/83
ppb	(12.4)	(13.6)	(12.7)	(10.8)	(13.6)
2nd Analysis Date	12/13/83	12/12/83	12/12/83	12/14/83	12/14/83
ppb	(11.5)	(11.9)	(11.6)	(11.3)	(14.3)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(15.7 ± 0.5)	(14.6 ± 0.3)	(17.2 ± 0.4)	(16.2 ± 0.5)	(15.2 ± 0.5)
2nd RTI Analysis Day***	57	57	57	45	45
ppb	(16.2 ± 0.5)	(15.4 ± 0.3)	(17.2 ± 0.4)	(15.8 ± 0.5)	(16.1 ± 0.5)
3rd RTI Analysis Day***	238	238	238	226	226
ppb	(15.7 ± 0.5)	(15.2 ± 0.3)	(15.7 ± 0.4)	(18.2 ± 0.6)	(15.4 ± 0.5)
4th RTI Analysis Day***	400	400	400	374	374
ppb	(15.2 ± 0.5)	(14.7 ± 0.3)	(16.0 ± 0.4)	(17.4 ± 0.6)	(14.4 ± 0.5)
5th RTI Analysis Day***	501	501	501	507	507
ppb	(15.4 ± 0.5)	(14.8 ± 0.3)	(15.9 ± 0.4)	(16.9 ± 0.5)	(15.4 ± 0.5)
6th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
2nd RTI Analysis Day	57	57	57	45	45
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C13

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
3rd RTI Analysis Day ppb	238 (20.3 ± 0.6)	238 (23.6 ± 0.5)	238 (28.3 ± 0.7)	226 (19.0 ± 0.6)	226 (15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day ppb	400 (20.1 ± 0.6)	400 (22.7 ± 0.5)	400 (28.5 ± 0.7)	374 (18.4 ± 0.6)	374 (14.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day ppb	501 (20.0 ± 0.6)	501 (22.8 ± 0.5)	501 (28.1 ± 0.7)	507 (18.2 ± 0.6)	507 (15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day ppb	833 (144 ± 4.3)	833 (119 ± 2.5)	833 (135 ± 3.3)	810 (16.9 ± 0.5)	810 (14.7 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1700 (10.3 ± 1.7)	1700 (10.9 ± 0.9)	1700 (13.6 ± 1.2)	1683 (10.1 ± 0.8)	1683 (15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C14

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(19.6)	(19.4)	(19.9)	(19.8)	(15.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/29/83	11/29/83
ppb	(16.2)	(15.9)	(15.7)	(13.8)	(14.0)
2nd Analysis Date	12/13/83	12/13/83	12/13/83	12/14/83	12/14/83
ppb	(15.2)	(15.2)	(14.5)	(14.5)	(14.4)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(19.2 ± 0.6)	(18.4 ± 0.4)	(21.1 ± 0.5)	(20.8 ± 0.7)	(15.5 ± 0.5)
2nd RTI Analysis Day***	57	57	57	45	45
ppb	(20.0 ± 0.6)	(18.5 ± 0.4)	(21.2 ± 0.5)	(20.2 ± 0.6)	(15.6 ± 0.5)
3rd RTI Analysis Day***	238	238	238	226	226
ppb	(19.9 ± 0.6)	(19.1 ± 0.4)	(20.2 ± 0.5)	(22.0 ± 0.7)	(17.0 ± 0.5)
4th RTI Analysis Day***	400	400	400	374	374
ppb	(19.3 ± 0.6)	(18.3 ± 0.4)	(20.7 ± 0.5)	(20.6 ± 0.7)	(15.0 ± 0.5)
5th RTI Analysis Day***	501	501	501	507	507
ppb	(19.6 ± 0.6)	(18.1 ± 0.4)	(20.3 ± 0.5)	(21.2 ± 0.7)	(16.1 ± 0.5)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(24.2 ± 0.7)	(21.6 ± 0.5)	(24.5 ± 0.6)	(21.7 ± 0.7)	(16.7 ± 0.5)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C14

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	57	57	57	45	45
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
ppb	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
ppb	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
ppb	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1700	1700	1700	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C15

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(18.1)	(17.9)	(18.3)	(18.3)	(15.0)
1st Analysis Date ppb	10/25/83 (14.0)	10/25/83 (14.3)	10/25/83 (13.8)	11/29/83 (11.9)	11/29/83 (13.8)
2nd Analysis Date ppb	12/13/83 (12.9)	12/13/83 (13.0)	12/13/83 (12.6)	12/14/83 (12.7)	12/14/83 (14.2)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	1/05/84 (17.2 ± 0.5)	1/05/84 (16.2 ± 0.3)	1/05/84 (19.3 ± 0.5)	1/23/84 (18.1 ± 0.6)	1/23/84 (14.9 ± 0.5)
2nd RTI Analysis Day*** ppb	57 (17.2 ± 0.5)	57 (16.7 ± 0.4)	57 (19.4 ± 0.5)	45 (17.5 ± 0.6)	45 (14.8 ± 0.5)
3rd RTI Analysis Day*** ppb	238 (17.6 ± 0.5)	238 (17.0 ± 0.4)	238 (17.9 ± 0.4)	226 (19.8 ± 0.6)	226 (15.6 ± 0.5)
4th RTI Analysis Day*** ppb	400 (17.0 ± 0.5)	400 (16.4 ± 0.3)	400 (18.3 ± 0.4)	374 (18.8 ± 0.6)	374 (14.9 ± 0.5)
5th RTI Analysis Day*** ppb	501 (15.9 ± 0.5)	501 (16.4 ± 0.3)	501 (17.4 ± 0.4)	507 (18.6 ± 0.6)	507 (15.4 ± 0.5)
6th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	empty	empty	empty	empty	empty
RTI QUALITY CONTROL$^+$					
1st RTI Analysis Date ppb	1/05/84 (20.4 ± 0.6)	1/05/84 (22.8 ± 0.5)	1/05/84 (30.7 ± 0.7)	1/23/84 (17.5 ± 0.6)	1/23/84 (14.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C15

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
2nd RTI Analysis Day	57	57	57	45	45
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
ppb	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
ppb	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
ppb	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
ppb	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day	1700	1700	1700	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-C16

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(20.9)	(20.7)	(21.2)	(21.2)	(15.0)
1st Analysis Date	11/11/83	11/11/83	11/11/83	11/29/83	11/29/83
ppb	(15.6)	(11.1)	(12.5)	(9.10)	(13.9)
2nd Analysis Date	12/13/83	12/13/83	12/13/83	12/14/83	12/14/83
ppb	(14.2)	(8.10)	(11.7)	(9.40)	(13.8)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(17.9 ± 0.5)	(9.0 ± 0.2)	(16.5 ± 0.4)	(13.8 ± 0.4)	(14.9 ± 0.5)
2nd RTI Analysis Day***	57	57	57	45	45
ppb	(17.4 ± 0.5)	(7.9 ± 0.2)	(15.4 ± 0.4)	(13.2 ± 0.4)	(14.8 ± 0.5)
3rd RTI Analysis Day***	238	238	238	226	226
ppb	(16.2 ± 0.5)	(6.0 ± 0.1)	(14.6 ± 0.4)	(14.6 ± 0.5)	(15.8 ± 0.5)
4th RTI Analysis Day***	400	400	400	374	374
ppb	(14.9 ± 0.4)	(4.8 ± 0.1)	(14.6 ± 0.4)	(13.6 ± 0.4)	(12.3 ± 0.4)
5th RTI Analysis Day***	501	501	501	507	507
ppb	(14.5 ± 0.4)	(3.7 ± 0.1)	(14.2 ± 0.3)	(12.2 ± 0.4)	(11.6 ± 0.4)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(15.4 ± 0.5)	(3.2 ± 0.1)	(16.1 ± 0.4)	(12.7 ± 0.4)	(13.2 ± 0.4)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
2nd RTI Analysis Day	57	57	57	45	45
ppb	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-C16

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
			RTI QUALITY CONTROL +		
3rd RTI Analysis Day ppb	238 (20.3 ± 0.6)	238 (23.6 ± 0.5)	238 (28.3 ± 0.7)	226 (19.0 ± 0.6)	226 (15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day ppb	400 (20.1 ± 0.6)	400 (22.7 ± 0.5)	400 (28.5 ± 0.7)	374 (18.4 ± 0.6)	374 (14.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day ppb	501 (20.0 ± 0.6)	501 (22.8 ± 0.5)	501 (28.1 ± 0.7)	507 (18.2 ± 0.6)	507 (15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day ppb	833 (144 ± 4.3)	833 (119 ± 2.5)	833 (135 ± 3.3)	810 (16.9 ± 0.5)	810 (14.7 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
8th RTI Analysis Day ppb	1700 (10.3 ± 1.7)	1700 (10.9 ± 0.9)	1700 (13.6 ± 1.2)	1683 (10.1 ± 0.8)	1683 (15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A1

ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(9.70)	(40.5)	(9.60)	(19.3)	(20.0)
1st Analysis Date	11/16/83	11/16/83	11/16/83	12/06/83	12/06/83
ppb	(8.30)	(42.9)	(10.2)	(16.0)	(18.8)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
ppb	(7.30)	(41.6)	(7.30)	(16.8)	(19.2)
RTI ANALYSIS**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(9.8 ± 0.3)	(40.4 ± 0.8)	(10.8 ± 0.3)	(19.6 ± 0.6)	(20.3 ± 0.6)
2nd RTI Analysis Day***	59	59	59	49	49
ppb	(9.9 ± 0.3)	(42.0 ± 0.9)	(9.6 ± 0.2)	(20.0 ± 0.6)	(19.8 ± 0.6)
3rd RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
4th RTI Analysis Day***	404	404	404	375	375
ppb	(9.9 ± 0.3)	(37.6 ± 0.8)	(9.1 ± 0.2)	(19.4 ± 0.6)	(20.2 ± 0.6)
5th RTI Analysis Day***	497	497	497	508	508
ppb	(9.5 ± 0.3)	(37.3 ± 0.8)	(10.0 ± 0.2)	(19.7 ± 0.6)	(20.6 ± 0.7)
6th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
RTI QUALITY CONTROL+					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A1

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	**Chloroform**	**Perchloro-ethylene**	**Benzene**	**Vinyl chloride**
	RTI QUALITY CONTROL +				
2nd RTI Analysis Day	59	59	59	49	49
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	404	404	404	375	375
ppb	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	497	497	497	508	508
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day***	1698	1698	1698	1683	1683
ppb	(10.7 ± 2.1)	(10.0 ± 1.5)	(13.5 ± 1.5)	(9.87 ± 1.0)	(15.2 ± 1.3)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A2

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
			MANUFACTURER ANALYSIS		
Theoretical					
ppb	(9.50)	(39.6)	(9.40)	(18.9)	(20.0)
1st Analysis Date	11/17/83	11/17/83	11/17/83	12/06/83	12/06/83
ppb	(7.70)	(42.1)	(9.20)	(15.8)	(18.3)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
ppb	(7.10)	(41.2)	(7.70)	(19.6)	(19.2)
			RTI ANALYSIS**		
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(9.30 ± 0.3)	(40.0 ± 0.8)	(9.40 ± 0.2)	(19.6 ± 0.6)	(20.2 ± 0.6)
2nd RTI Analysis Day***	59	59	59	49	49
ppb	(9.30 ± 0.3)	(38.7 ± 0.8)	(10.3 ± 0.2)	(20.0 ± 0.6)	(19.0 ± 0.6)
3rd RTI Analysis Day***	238	238	238	226	226
ppb	(9.50 ± 0.3)	(40.6 ± 0.9)	(9.50 ± 0.2)	(19.4 ± 0.6)	(20.6 ± 0.7)
4th RTI Analysis Day***	404	404	404	375	375
ppb	(9.60 ± 0.3)	(37.1 ± 0.8)	(9.10 ± 0.2)	(19.4 ± 0.6)	(20.4 ± 0.7)
5th RTI Analysis Day***					
ppb	on audit	on audit	on audit	on audit	on audit
6th RTI Analysis Day***	833	833	833	810	810
ppb	(10.5 ± 0.3)	(40.5 ± 0.9)	(11.2 ± 0.3)	(19.7 ± 0.6)	(19.4 ± 0.6)
7th RTI Analysis Day***	1337	1337	1337	1337	1337
ppb	(9.45 ± 0.3)	(40.6 ± 0.9)	(10.1 ± 0.3)	(19.2 ± 0.6)	(20.1 ± 0.6)
8th RTI Analysis Day***	1699	1699	1699	1682	1682
ppb	(9.36 ± 1.9)	(44.2 ± 4.0)	(9.65 ± 1.2)	(18.3 ± 2.1)	(19.3 ± 2.4)
			RTI QUALITY CONTROL +		
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A2

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
			RTI QUALITY CONTROL+		
2nd RTI Analysis Day ppb	59 (20.3 ± 0.6)	59 (8.90 ± 0.2)	59 (23.6 ± 0.6)	49 (18.6 ± 0.6)	49 (15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day ppb	238 (21.1 ± 0.6)	238 (24.3 ± 0.5)	238 (29.5 ± 0.7)	226 (19.0 ± 0.6)	226 (15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day ppb	404 (20.6 ± 0.6)	404 (23.2 ± 0.5)	404 (28.7 ± 0.7)	375 (18.1 ± 0.6)	375 (14.1 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day ppb	497 (19.9 ± 0.6)	497 (22.9 ± 0.5)	497 (28.8 ± 0.7)	508 (18.5 ± 0.6)	508 (15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day ppb	833 (22.4 ± 0.7)	833 (25.5 ± 0.5)	833 (32.7 ± 0.8)	810 (16.9 ± 0.5)	810 (14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1337 (18.7 ± 0.9)	1337 (9.80 ± 0.4)	1337 (23.0 ± 0.6)	1337 (17.3 ± 0.5)	1337 (16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day ppb	1699 (10.9 ± 1.9)	1699 (10.6 ± 0.9)	1699 (13.5 ± 1.1)	1682 (9.96 ± 1.0)	1682 (15.4 ± 1.8)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.0 ± 0.7)	(10.10 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A3

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(11.4)	(47.3)	(11.2)	(22.5)	(20.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
ppb	(9.50)	(47.2)	(9.40)	(18.7)	(15.8)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
ppb	(8.90)	(48.7)	(8.60)	(20.3)	(19.4)
RTI ANALYSIS**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(11.5 ± 0.3)	(46.6 ± 1.0)	(12.0 ± 0.3)	(23.2 ± 0.7)	(20.3 ± 0.6)
2nd RTI Analysis Day***	59	59	59	49	49
ppb	(11.0 ± 0.3)	(47.4 ± 1.0)	(11.3 ± 0.3)	(25.2 ± 0.8)	(19.8 ± 0.6)
3rd RTI Analysis Day***					
ppb	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day***	404	404	404	375	375
ppb	(11.4 ± 0.3)	(43.9 ± 0.9)	(10.3 ± 0.2)	(23.0 ± 0.7)	(20.5 ± 0.7)
5th RTI Analysis Day***	497	497	497		
ppb	(11.0 ± 0.3)	(43.6 ± 0.9)	(11.6 ± 0.3)	on audit	on audit
6th RTI Analysis Day***	833	833	833	810	810
ppb	(12.3 ± 0.4)	(48.3 ± 1.0)	(13.3 ± 0.3)	(24.6 ± 0.8)	(21.1 ± 0.7)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1706	1706	1706	1683	1683
ppb	(10.2 ± 1.5)	(52.8 ± 3.8)	(11.6 ± 1.0)	(22.1 ± 2.0)	(20.1 ± 1.6)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A3

ACTIVITY	COMPOUND Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	59	59	59	49	49
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	404	404	404	375	375
ppb	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	497	497	497	508	508
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1700	1700	1700	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A4

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(10.9)	(45.3)	(10.8)	(21.5)	(20.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
ppb	(9.00)	(46.5)	(9.60)	(18.6)	(18.3)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
ppb	(8.60)	(51.1)	(10.1)	(19.5)	(19.2)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/23/84	1/23/84
ppb	(11.0 ± 0.3)	(45.0 ± 0.9)	(12.0 ± 0.3)	(22.3 ± 0.7)	(20.5 ± 0.7)
2nd RTI Analysis Day***	59	59	59	59	59
ppb	on audit	on audit	on audit	on audit	on audit
3rd RTI Analysis Day***	238	238	238	226	226
ppb	(10.8 ± 0.3)	(47.1 ± 1.0)	(10.3 ± 0.2)	(23.2 ± 0.7)	(20.1 ± 0.6)
4th RTI Analysis Day***	404	404	404	375	375
ppb	(11.4 ± 0.3)	(43.9 ± 0.9)	(10.3 ± 0.2)	(19.9 ± 0.6)	(22.1 ± 0.7)
5th RTI Analysis Day***				508	508
ppb	on audit	on audit	on audit	(22.3 ± 0.7)	(19.8 ± 0.6)
6th RTI Analysis Day***					
ppb	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day***	1337	1337	1337	1337	1337
ppb	(10.8 ± 0.3)	(43.3 ± 0.9)	(10.6 ± 0.2)	(21.8 ± 0.7)	(19.7 ± 0.6)
8th RTI Analysis Day***	1697	1697	1697	1683	1683
ppb	(10.3 ± 1.2)	(51.0 ± 3.6)	(11.4 ± 1.0)	(21.4 ± 1.8)	(20.0 ± 1.7)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
ppb	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A4

ACTIVITY	COMPOUND Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	59	59	59	49	49
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	404	404	404	375	375
ppb	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	497	497	497	508	508
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.3 ± 0.9)	(9.54 ± 0.2)	(22.7 ± 0.6)	(16.6 ± 0.5)	(15.8 ± 0.5)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1697	1697	1697	1683	1683
ppb	(10.3 ± 1.7)	(10.9 ± 0.9)	(13.6 ± 1.2)	(10.1 ± 0.8)	(15.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A5

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(48.4)	(10.6)	(10.6)	(48.4)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
ppb	(46.6)	(9.70)	(9.50)	(45.1)	(47.5)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
ppb	(47.8)	(9.00)	(8.70)	(46.0)	(49.8)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(47.7 ± 1.4)	(10.5 ± 0.2)	(11.2 ± 0.3)	(51.6 ± 1.7)	(53.0 ± 1.7)
2nd RTI Analysis Day***	57	57	57	53	53
ppb	(51.1 ± 1.5)	(9.3 ± 0.2)	(9.0 ± 0.2)	(52.0 ± 1.7)	(50.0 ± 1.6)
3rd RTI Analysis Day***	235	235	235	229	229
ppb	(50.9 ± 1.5)	(10.5 ± 0.2)	(10.5 ± 0.3)	(54.0 ± 1.7)	(52.8 ± 1.7)
4th RTI Analysis Day***	402	402	402	375	375
ppb	(47.2 ± 1.4)	(10.2 ± 0.2)	(10.4 ± 0.2)	(53.8 ± 1.7)	(50.8 ± 1.6)
5th RTI Analysis Day***	494	494	494	497	497
ppb	(46.0 ± 1.4)	(10.3 ± 0.2)	(10.7 ± 0.3)	(49.0 ± 1.6)	(50.1 ± 1.6)
6th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1747	1747	1747	1737	1737
ppb	(49.7 ± 3.1)	(10.2 ± 0.8)	(11.4 ± 0.7)	(48.0 ± 3.3)	(52.0 ± 4.2)
RTI QUALITY CONTROL^{+}					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration					
ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A5

ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL[+]					
2nd RTI Analysis Day	57	57	57	53	53
ppb	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
ppb	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1747	1747	1747	1737	1737
ppb	(5.10 ± 0.4)	(5.17 ± 0.4)	(5.47 ± 0.4)	(5.34 ± 0.4)	(4.70 ± 0.5)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

[+] An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A6

ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(38.8)	(8.50)	(8.50)	(38.8)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
ppb	(38.0)	(6.90)	(8.80)	(35.0)	(47.1)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
ppb	(37.5)	(6.70)	(8.10)	(34.5)	(49.3)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(38.6 ± 1.2)	(8.20 ± 0.2)	(8.50 ± 0.2)	(41.9 ± 1.3)	(53.0 ± 1.7)
2nd RTI Analysis Day***	57	57	57	53	53
ppb	(41.0 ± 1.2)	(7.30 ± 0.2)	(7.90 ± 0.2)	(41.1 ± 1.3)	(49.8 ± 1.6)
3rd RTI Analysis Day***	235	235	235	229	229
ppb	(40.4 ± 1.2)	(8.20 ± 0.2)	(8.20 ± 0.2)	(43.1 ± 1.4)	(51.9 ± 1.7)
4th RTI Analysis Day***	402	402	402	375	375
ppb	(37.7 ± 1.1)	(8.30 ± 0.2)	(8.40 ± 0.2)	(40.7 ± 1.3)	(50.8 ± 1.6)
5th RTI Analysis Day***	494	494	494	497	497
ppb	(37.2 ± 1.1)	(8.10 ± 0.2)	(9.00 ± 0.2)	(39.1 ± 1.3)	(50.3 ± 1.6)
6th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day***	1568 [‡]	1568	1568	1558	1558
ppb	(36.3 ± 3.8)[†]	(9.02 ± 1.7)	(9.15 ± 1.2)	(37.3 ± 3.8)	(52.0 ± 7.6)
RTI QUALITY CONTROL[+]					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A6

ACTIVITY	COMPOUND Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	57	57	57	53	53
ppb	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
ppb	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1568 ‡	1568	1568	1558	1558
ppb	(11.1 ± 2.0)†	(10.4 ± 1.8)	(13.5 ± 2.9)	(10.1 ± 1.6)	(15.4 ± 1.7)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ ‡ An NBS primary standard was used as internal quality control on each day of RTI analysis.

† ECD analysis data.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A7

ACTIVITY	COMPOUND Carbon tetrachloride	 Chloroform	 Perchloroethylene	 Benzene	 Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(51.1)	(11.2)	(11.2)	(51.1)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
ppb	(49.2)	(10.4)	(10.4)	(47.1)	(48.6)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
ppb	(49.9)	(9.50)	(9.30)	(48.5)	(48.5)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(49.2 ± 1.5)	(11.1 ± 0.2)	(11.8 ± 0.3)	(54.1 ± 1.7)	(53.4 ± 1.7)
2nd RTI Analysis Day***	57	57	57	53	53
ppb	(54.0 ± 1.6)	(9.70 ± 0.2)	(9.70 ± 0.2)	(54.8 ± 1.8)	(49.7 ± 1.6)
3rd RTI Analysis Day***	235	235	235	229	229
ppb	(53.3 ± 1.6)	(11.0 ± 0.2)	(11.2 ± 0.3)	(56.2 ± 1.8)	(51.9 ± 1.7)
4th RTI Analysis Day***	402	402	402	375	375
ppb	(49.6 ± 1.5)	(10.7 ± 0.2)	(11.1 ± 0.3)	(53.8 ± 1.7)	(50.8 ± 1.6)
5th RTI Analysis Day***	494	494	494	497	497
ppb	(47.8 ± 1.5)	(10.8 ± 0.2)	(11.7 ± 0.3)	(52.3 ± 1.7)	(50.4 ± 1.6)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(54.5 ± 1.6)	(12.2 ± 0.3)	(13.6 ± 0.3)	(49.0 ± 1.6)	(45.8 ± 1.5)
7th RTI Analysis Day***	1337	1337	1337	1337	1337
ppb	(56.0 ± 1.6)	(11.0 ± 0.3)	(11.9 ± 0.3)	(51.3 ± 1.7)	(54.4 ± 1.8)
8th RTI Analysis Day***	1747	1747	1747	1737	1737
ppb	(52.2 ± 3.1)	(10.6 ± 0.6)	(11.7 ± 0.7)	(50.4 ± 3.2)	(51.6 ± 3.4)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
ppb	(18.9 ± 0.6)	(9.4 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration					
ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A7

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL[+]					
2nd RTI Analysis Day	57	57	57	53	53
ppb	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
ppb	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
ppb	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
ppb	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.3 ± 0.9)	(9.54 ± 0.2)	(22.7 ± 0.6)	(16.6 ± 0.5)	(15.8 ± 0.5)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1747	1747	1747	1747	1747
ppb	(5.10 ± 0.9)	(5.17 ± 0.4)	(5.47 ± 0.4)	(5.34 ± 0.4)	(4.70 ± 0.5)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

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* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

[+] An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A8

ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
			COMPOUND		
			MANUFACTURER ANALYSIS		
Theoretical ppb	 (55.1)	 (12.1)	 (12.1)	 (55.1)	 ---
1st Analysis Date ppb	12/09/83 (52.6)	12/09/83 (7.90)	12/09/83 (10.5)	12/07/83 (42.7)	12/07/83 (48.4)
2nd Analysis Date ppb	12/20/83 (53.2)	12/20/83 (6.30)	12/20/83 (9.50)	12/15/83 (43.9)	12/15/83 (48.3)
			RTI ANALYSIS**		
1st RTI Analysis Date ppb	1/09/84 (53.5 ± 2.7)	1/09/84 (7.40 ± 0.2)	1/09/84 (11.3 ± 0.3)	1/19/84 (48.3 ± 1.5)	1/19/84 (51.7 ± 1.7)
2nd RTI Analysis Day*** ppb	57 (59.0 ± 1.8)	57 (6.00 ± 0.1)	57 (10.5 ± 0.3)	53 (48.1 ± 1.5)	53 (49.2 ± 1.6)
3rd RTI Analysis Day*** ppb	 on audit	 on audit	 on audit	 on audit	 on audit
4th RTI Analysis Day*** ppb	402 (51.3 ± 1.5)	402 (4.30 ± 0.1)	402 (10.3 ± 0.2)	375 (46.3 ± 1.5)	375 (49.0 ± 1.6)
5th RTI Analysis Day*** ppb	494 (50.1 ± 1.5)	494 (4.10 ± 0.1)	494 (11.4 ± 0.3)	497 (44.2 ± 1.4)	497 (48.5 ± 1.6)
6th RTI Analysis Day*** ppb	833 (56.9 ± 1.7)	833 (3.90 ± 0.1)	833 (13.3 ± 0.3)	810 (43.4 ± 1.4)	810 (45.8 ± 1.5)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	1695 (54.0 ± 6.8)	1695 (3.52 ± 0.3)	1695 (14.1 ± 1.8)	1685 (44.1 ± 3.9)	1685 (52.0 ± 4.3)
			RTI QUALITY CONTROL +		
1st RTI Analysis Date ppb	1/09/84 (18.9 ± 0.6)	1/09/84 (9.40 ± 0.2)	1/09/84 (24.4 ± 0.6)	1/19/84 (20.2 ± 0.6)	1/19/84 (16.3 ± 0.5)
NBS Concentration ppb	 (190 ± 1.0)	 (9.00 ± 1.0)	 (22.0 ± 1.0)	 (17.0 ± 1.0)	 (15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A8

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day ppb	57 (21.5 ± 0.6)	57 (10.1 ± 0.2)	57 (26.1 ± 0.6)	53 (18.6 ± 0.6)	53 (15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day ppb	235 (21.1 ± 0.6)	235 (24.3 ± 0.5)	235 (29.5 ± 0.7)	229 (19.0 ± 0.6)	229 (15.3 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day ppb	402 (18.9 ± 0.6)	402 (9.20 ± 0.2)	402 (21.9 ± 0.5)	375 (17.8 ± 0.6)	375 (14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day ppb	494 (19.9 ± 0.6)	494 (22.9 ± 0.5)	494 (28.8 ± 0.7)	497 (18.5 ± 0.6)	497 (29.4 ± 0.9)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day ppb	833 (22.4 ± 0.7)	833 (25.5 ± 0.5)	833 (32.7 ± 0.8)	810 (16.9 ± 0.5)	810 (14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1337 (18.7 ± 0.9)	1337 (9.80 ± 0.4)	1337 (23.0 ± 0.6)	1337 (17.3 ± 0.5)	1337 (16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day ppb	1695 (10.7 ± 2.1)	1695 (10.0 ± 1.5)	1695 (13.5 ± 1.4)	1685 (9.87 ± 1.0)	1685 (15.2 ± 1.3)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A9

ACTIVITY	COMPOUND Carbon tetra-chloride	 Chloroform	 Perchloro-ethylene	 Benzene	 Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(13.6)	(13.4)	(68.4)	(48.3)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
ppb	(11.1)	(11.3)	(63.5)	(41.8)	(29.0)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
ppb	(11.8)	(11.4)	(63.8)	(43.9)	(28.5)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(13.0 ± 2.7)	(11.9 ± 0.2)	(69.6 ± 1.7)	(46.8 ± 1.5)	(31.1 ± 1.0)
2nd RTI Analysis Day***	60	60	60	52	52
ppb	(11.8 ± 0.4)	(10.5 ± 0.2)	(67.6 ± 1.6)	(46.4 ± 1.5)	(29.3 ± 0.9)
3rd RTI Analysis Day***	238	238	238	228	228
ppb	(12.7 ± 0.4)	(12.3 ± 0.3)	(62.2 ± 1.5)	(48.0 ± 1.5)	(31.3 ± 1.0)
4th RTI Analysis Day***	407	407	407	374	374
ppb	(12.5 ± 0.4)	(11.8 ± 0.2)	(63.7 ± 1.5)	(45.8 ± 1.5)	(29.9 ± 1.0)
5th RTI Analysis Day***	496	496	496	496	496
ppb	(12.0 ± 0.4)	(12.0 ± 0.3)	(64.3 ± 1.5)	(44.7 ± 1.4)	(29.0 ± 0.9)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(13.7 ± 0.4)	(13.3 ± 0.3)	(69.9 ± 1.7)	(46.6 ± 1.5)	(31.3 ± 1.0)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	empty	empty	empty	empty	empty
RTI QUALITY CONTROL$^+$					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A9

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
2nd RTI Analysis Day	60	60	60	52	52
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration					
ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
ppb	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
ppb	(20.7 ± 0.6)	(23.3 ± 0.5)	(29.0 ± 0.7)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
ppb	(20.3 ± 0.6)	(23.4 ± 0.5)	(30.6 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
ppb					
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration					
ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1698	1698	1698	1683	1683
ppb	(10.7 ± 2.1)	(10.0 ± 1.5)	(13.5 ± 1.5)	(9.87 ± 1.0)	(15.2 ± 1.3)
NBS concentration					
ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A10

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(13.3)	(13.1)	(67.0)	(47.3)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
ppb	(11.1)	(11.8)	(75.1)	(41.0)	(28.9)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
ppb	(11.8)	(11.1)	(64.1)	(43.3)	(28.3)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(12.6 ± 2.7)	(11.6 ± 0.2)	(68.6 ± 1.6)	(46.1 ± 1.5)	(31.6 ± 1.0)
2nd RTI Analysis Day***	60	60	60	52	52
ppb	(11.6 ± 0.3)	(10.2 ± 0.2)	(67.7 ± 1.6)	(45.2 ± 1.4)	(29.8 ± 1.0)
3rd RTI Analysis Day***	238	238	238	228	228
ppb	(12.5 ± 0.4)	(12.2 ± 0.3)	(62.2 ± 1.5)	(47.3 ± 1.5)	(32.0 ± 1.0)
4th RTI Analysis Day***	407	407	407	374	374
ppb	(12.5 ± 0.4)	(11.7 ± 0.2)	(62.1 ± 1.5)	(45.4 ± 1.5)	(30.4 ± 1.0)
5th RTI Analysis Day***	496	496	496	504	504
ppb	(12.3 ± 0.4)	(12.2 ± 0.3)	(65.1 ± 1.6)	(43.9 ± 1.4)	(29.9 ± 1.0)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(14.4 ± 0.4)	(14.4 ± 0.3)	(70.1 ± 1.7)	(45.7 ± 1.5)	(31.3 ± 1.0)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1738	1738	1738	1723	1723
ppb	(11.7 ± 0.9)	(11.9 ± 0.8)	(66.2 ± 3.6)	(44.6 ± 2.8)	(30.8 ± 1.9)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A10

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	60	60	60	52	52
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
ppb	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
ppb	(20.7 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
ppb	(20.3 ± 0.6)	(23.4 ± 0.5)	(30.6 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1738	1738	1738	1723	1723
ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.5)	(4.77 ± 0.4)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A11

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(11.7)	(11.5)	(59.0)	(41.6)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
ppb	(5.70)	(7.30)	(25.9)	(22.1)	(28.5)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
ppb	(6.70)	(6.20)	(20.6)	(23.2)	(28.6)
RTI ANALYSIS**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(7.80 ± 2.7)	(7.80 ± 0.2)	(22.8 ± 0.5)	(26.2 ± 0.8)	(31.4 ± 1.0)
2nd RTI Analysis Day***	60	60	60	52	52
ppb	(6.60 ± 0.2)	(7.40 ± 0.2)	(21.9 ± 0.5)	(26.0 ± 0.8)	(29.6 ± 0.9)
3rd RTI Analysis Day***	238	238	238	228	228
ppb	(7.10 ± 0.2)	(8.10 ± 0.2)	(21.1 ± 0.5)	(29.9 ± 1.0)	(32.0 ± 1.0)
4th RTI Analysis Day***	407	407	407	374	374
ppb	(7.00 ± 0.2)	(7.80 ± 0.2)	(21.5 ± 0.5)	(29.8 ± 1.0)	(32.0 ± 1.0)
5th RTI Analysis Day***	496	496	496	504	504
ppb	(6.40 ± 0.2)	(7.90 ± 0.2)	(21.1 ± 0.5)	(25.9 ± 0.8)	(30.1 ± 1.0)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(8.00 ± 0.2)	(9.40 ± 0.2)	(24.4 ± 0.6)	(26.5 ± 0.7)	(32.1 ± 1.0)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1700	1700	1700	1685	1685
ppb	(6.32 ± 0.7)	(9.01 ± 1.8)	(21.8 ± 2.2)	(24.9 ± 2.3)	(29.9 ± 2.9)
RTI QUALITY CONTROL[+]					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
ppb	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A11

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
2nd RTI Analysis Day ppb	60 (20.3 ± 0.6)	60 (8.90 ± 0.2)	60 (23.6 ± 0.6)	52 (18.6 ± 0.6)	52 (15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day ppb	238 (20.3 ± 0.6)	238 (23.6 ± 0.5)	238 (28.3 ± 0.7)	238 (19.0 ± 0.6)	238 (14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day ppb	407 (20.7 ± 0.6)	407 (23.3 ± 0.5)	407 (29.0 ± 0.7)	374 (17.8 ± 0.6)	374 (14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day ppb	496 (20.0 ± 0.6)	496 (22.8 ± 0.5)	496 (28.1 ± 0.7)	504 (18.6 ± 0.6)	504 (14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day ppb	833 (22.4 ± 0.7)	833 (25.5 ± 0.5)	833 (32.7 ± 0.8)	810 (18.9 ± 0.6)	810 (15.2 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1337 (18.7 ± 0.9)	1337 (9.80 ± 0.4)	1337 (23.0 ± 0.6)	1337 (17.3 ± 0.5)	1337 (16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day ppb	1700 (10.9 ± 1.9)	1700 (10.6 ± 0.4)	1700 (13.5 ± 1.1)	1685 (9.96 ± 1.0)	1685 (15.4 ± 1.8)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A12

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(14.3)	(14.0)	(71.8)	(50.7)	(30.0)
1st Analysis Date ppb	12/08/83 (12.7)	12/08/83 (13.2)	12/08/83 (70.9)	12/09/83 (46.5)	12/09/83 (28.1)
2nd Analysis Date ppb	12/19/83 (12.6)	12/19/83 (12.9)	12/19/83 (68.3)	12/16/83 (48.9)	12/16/83 (28.5)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	1/05/84 (14.2 ± 2.7)	1/05/84 (13.0 ± 0.3)	1/05/84 (74.3 ± 1.8)	1/20/84 (51.9 ± 1.7)	1/20/84 (31.1 ± 1.0)
2nd RTI Analysis Day*** ppb	60 (13.4 ± 0.4)	60 (12.4 ± 0.3)	60 (75.6 ± 1.8)	52 (51.2 ± 1.6)	52 (29.6 ± 0.9)
3rd RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
5th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
6th RTI Analysis Day*** ppb	833 (16.9 ± 0.5)	833 (15.3 ± 0.4)	833 (78.0 ± 1.9)	810 (52.6 ± 1.7)	810 (31.8 ± 1.0)
7th RTI Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit
8th RTI Analysis Day*** ppb	1698 (13.1 ± 1.6)	1698 (16.7 ± 2.9)	1698 (80.7 ± 6.3)	1683 (53.7 ± 4.8)	1683 (33.3 ± 3.4)
RTI QUALITY CONTROL +					
1st RTI Analysis Date ppb	1/05/84 (20.4 ± 0.6)	1/05/84 (22.8 ± 0.5)	1/05/84 (30.7 ± 0.7)	1/20/84 (18.4 ± 0.6)	1/20/84 (14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A12

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	60	60	60	52	52
ppb	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
ppb	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
ppb	(20.7 ± 0.6)	(23.3 ± 0.5)	(29.0 ± 0.7)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
ppb	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1698	1698	1698	1683	1683
ppb	(10.7 ± 2.1)	(10.0 ± 1.5)	(13.5 ± 1.5)	(9.87 ± 1.0)	(15.2 ± 1.3)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A13

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(89.0)	(353)	(313)	(134)	(150)
1st Analysis Date	12/07/83	12/07/83	12/07/83	12/08/83	12/08/83
ppb	(83.3)	(369)	(297)	(133)	(136)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
ppb	(81.0)	(371)	(315)	(139)	(145)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(91.6 ± 2.7)	(351 ± 7.4)	(332 ± 8.0)	(140 ± 4.5)	(156 ± 5.0)
2nd RTI Analysis Day***	57	57	57	54	54
ppb	(97.0 ± 2.9)	(354 ± 7.4)	(359 ± 8.6)	(139 ± 4.4)	(152 ± 4.9)
3rd RTI Analysis Day***	231	231	231	225	225
ppb	(94.7 ± 2.8)	(334 ± 7.0)	(323 ± 7.8)	(145 ± 4.6)	(153 ± 4.9)
4th RTI Analysis Day***	395	395	395	370	370
ppb	(86.7 ± 2.6)	(325 ± 6.8)	(322 ± 7.7)	(138 ± 4.4)	(153 ± 4.9)
5th RTI Analysis Day***	491	491	491	497	497
ppb	(86.2 ± 2.6)	(331 ± 7.0)	(313 ± 7.5)	(138 ± 4.4)	(146 ± 4.7)
6th RTI Analysis Day***	empty	empty	empty	empty	empty
ppb					
RTI QUALITY CONTROL $^+$					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
2nd RTI Analysis Day	57	57	57	54	54
ppb	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)	(192 ± 4.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A13

	COMPOUND				
ACTIVITY	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
3rd RTI Analysis Day	231	231	231	225	225
ppb	(155 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration					
ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	395	395	395	370	370
ppb	(154 ± 4.6)	(135 ± 2.8)	(145 ± 3.5)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration					
ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	491	491	491	497	497
ppb	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration					
ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

* Permeation tubes were used for calibration for all analyses.
** Analyses were performed by direct injection.
*** Number of days after 1st RTI analysis date.
+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A14

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(91.5)	(362)	(321)	(138)	(150
1st Analysis Date	12/07/83	12/07/83	12/07/83	12/08/83	12/08/83
ppb	(81.6)	(373)	(301)	(130)	(137)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
ppb	(78.3)	(367)	(312)	(135)	(145)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(90.5 ± 2.7)	(339 ± 7.1)	(324 ± 7.8)	(138 ± 4.4)	(154 ± 4.9)
2nd RTI Analysis Day***	57	57	57	54	54
ppb	(90.6 ± 2.7)	(345 ± 7.2)	(342 ± 8.2)	(135 ± 4.3)	(151 ± 4.8)
3rd RTI Analysis Day***	231	231	231	225	225
ppb	(92.3 ± 2.8)	(326 ± 6.8)	(317 ± 7.6)	(140 ± 4.5)	(153 ± 4.9)
4th RTI Analysis Day***	395	395	395	371	371
ppb	(85.7 ± 2.6)	(335 ± 7.0)	(322 ± 7.7)	(137 ± 4.4)	(152 ± 4.9)
5th RTI Analysis Day***					
ppb	(86.2 ± 2.6)	(331 ± 7.0)	(307 ± 7.4)	(137 ± 4.4)	(150 ± 4.8)
6th RTI Analysis Day***	833	833	833	810	810
ppb	(73.9 ± 2.2)	(350 ± 7.4)	(320 ± 7.9)	(127 ± 4.1)	(160 ± 5.2)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1702	1702	1702	1691	1691
ppb	(79.0 ± 5.3)	(346 ± 21)	(314 ± 14)	(132 ± 4.2)	(151 ± 6.7)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(18.9 ± 0.6)	(9.4 ± 0.2)	(24.4 ± 0.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A14

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day ppb	57 (21.5 ± 0.6)	57 (10.1 ± 0.2)	57 (26.1 ± 0.6)	54 (192 ± 6.1)	54 (192 ± 6.1)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day ppb	231 (155 ± 4.7)	231 (132 ± 2.8)	231 (147 ± 3.5)	225 (191 ± 6.1)	225 (191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day ppb	395 (155 ± 4.6)	395 (135 ± 2.8)	395 (146 ± 3.5)	371 (199 ± 6.4)	371 (187 ± 6.0)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	491 (142 ± 4.3)	491 (115 ± 2.4)	491 (126 ± 3.0)	497 (139 ± 4.4)	497 (149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (166 ± 5.0)	833 (130 ± 2.7)	833 (144 ± 3.5)	810 (18.9 ± 0.6)	810 (15.2 ± 0.5)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day ppb	1337 (18.7 ± 0.9)	1337 (9.80 ± 0.4)	1337 (23.0 ± 0.6)	1337 (17.3 ± 0.5)	1337 (16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day ppb	1702 (138 ± 12)	1702 (119 ± 8.6)	1702 (127 ± 4.8)	1691 (132 ± 4.7)	1691 (149 ± 7.5)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A15

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			MANUFACTURER ANALYSIS		
Theoretical ppb	(307)	(126)	(102)	(364)	(400)
1st Analysis Date ppb	12/07/83 (301)	12/07/83 (130)	12/07/83 (98.3)	12/02/83 (350)	12/02/83 (397)
2nd Analysis Date ppb	12/15/83 (293)	12/15/83 (143)	12/15/83 (119)	12/19/83 (360)	12/19/83 (393)
			RTI ANALYSIS**		
1st RTI Analysis Date ppb	1/09/84 (317 ± 6.7)	1/09/84 (125 ± 2.6)	1/09/84 (108 ± 2.6)	1/20/84 (382 ± 12)	1/20/84 (418 ± 13)
2nd RTI Analysis Day*** ppb	57 (327 ± 9.8)	57 (133 ± 2.8)	57 (119 ± 2.9)	51 (387 ± 12)	51 (404 ± 13)
3rd RTI Analysis Day*** ppb	231 (299 ± 9.0)	231 (126 ± 2.6)	231 (100 ± 2.4)	227 (391 ± 13)	227 (404 ± 13)
4th RTI Analysis Day*** ppb	395 (299 ± 9.0)	395 (126 ± 2.6)	395 (103 ± 2.5)	370 (378 ± 12)	370 (409 ± 13)
5th RTI Analysis Day*** ppb	491 (297 ± 8.9)	491 (123 ± 2.6)	491 (104 ± 2.5)	on audit	on audit
6th RTI Analysis Day*** ppb	833 (310 ± 9.2)	833 (117 ± 2.5)	833 (121 ± 3.0)	810 (392 ± 13)	810 (426 ± 14)
7th RTI Analysis Day*** ppb	1337 (291 ± 8.6)	1337 (123 ± 2.6)	1337 (104 ± 2.6)	1337 (367 ± 12)	1337 (416 ± 14)
8th RTI Analysis Day*** ppb	empty	empty	empty	empty	empty
			RTI QUALITY CONTROL +		
1st RTI Analysis Date ppb	1/09/84 (162 ± 4.9)	1/09/84 (130 ± 2.7)	1/09/84 (148 ± 3.6)	1/20/84 (18.4 ± 0.6)	1/20/84 (14.8 ± 0.5)
NBS Concentration ppb	(154 ± 3.0)	(134 ± 3.0)	(145 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A15

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL +					
2nd RTI Analysis Day	57	57	57	51	51
ppb	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day	231	231	231	227	227
ppb	(155 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	395	395	395	370	370
ppb	(154 ± 4.6)	(135 ± 2.8)	(145 ± 3.5)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	491	491	491	497	497
ppb	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
ppb	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
ppb	(18.3 ± 0.9)	(9.54 ± 0.2)	(22.7 ± 0.6)	(16.6 ± 0.5)	(15.8 ± 0.5)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day	1703	1703	1703	1692	1692
ppb	(140 ± 17)	(123 ± 27)	(126 ± 23)	(135 ± 13)	(155 ± 20)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 3)	(126 ± 3.0)	(133 ± 7.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A16

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(304)	(125)	(101)	(360)	(400)
1st Analysis Date	12/05/83	12/05/83	12/05/83	12/12/83	12/12/83
ppb	(297)	(120)	(91.5)	(344)	(397)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
ppb	(293)	(135)	(87.9)	(355)	(382)
RTI ANALYSIS**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(314 ± 9.4)	(122 ± 2.6)	(107 ± 2.6)	(377 ± 12)	(418 ± 13)
2nd RTI Analysis Day***	57	57	57	51	51
ppb	(323 ± 9.7)	(128 ± 2.7)	(119 ± 2.9)	(379 ± 12)	(403 ± 13)
3rd RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day***	395	395	395	370	370
ppb	(296 ± 8.9)	(126 ± 2.6)	(103 ± 2.5)	(368 ± 12)	(408 ± 13)
5th RTI Analysis Day***	491	491	491		
ppb	(295 ± 8.9)	(121 ± 2.5)	(104 ± 2.5)	on audit	on audit
6th RTI Analysis Day***	833	833	833	810	810
ppb	(307 ± 9.1)	(114 ± 2.4)	(120 ± 2.9)	(389 ± 13)	(423 ± 14)
7th RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
8th RTI Analysis Day***	1703	1703	1703	1692	1692
ppb	(270 ± 17)	(126 ± 8.4)	(107 ± 6.3)	(353 ± 14)	(400 ± 25)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
ppb	(162 ± 4.9)	(130 ± 2.7)	(148 ± 3.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration ppb	(154 ± 3.0)	(134 ± 3.0)	(145 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS* (continued)
CYLINDER I-A16

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL +		
2nd RTI Analysis Day ppb	57 (21.5 ± 0.6)	57 (10.1 ± 0.2)	57 (26.1 ± 0.6)	51 (192 ± 6.1)	51 (192 ± 6.1)
NBS Concentration ppb	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day ppb	231 (155 ± 4.7)	231 (132 ± 2.8)	231 (147 ± 3.5)	227 (191 ± 6.1)	227 (191 ± 6.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day ppb	395 (154 ± 4.6)	395 (135 ± 2.8)	395 (145 ± 3.5)	370 (200 ± 6.4)	370 (195 ± 6.2)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day ppb	491 (142 ± 4.3)	491 (115 ± 2.4)	491 (126 ± 3.0)	497 (139 ± 4.4)	497 (149 ± 4.8)
NBS Concentration ppb	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day ppb	833 (166 ± 5.0)	833 (130 ± 2.7)	833 (144 ± 3.5)	810 (143 ± 4.6)	810 (156 ± 5.1)
NBS Concentration ppb	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day ppb	1337 (18.7 ± 0.9)	1337 (9.80 ± 0.4)	1337 (23.0 ± 0.6)	1337 (17.3 ± 0.5)	1337 (16.6 ± 0.6)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
8th RTI Analysis Day ppb	1703 (140 ± 16)	1703 (123 ± 27)	1703 (126 ± 23)	1692 (135 ± 13)	1692 (155 ± 20)
NBS Concentration ppb	(141 ± 5.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 7.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration for 7th RTI analysis. Permeation tubes were used for calibration for all previous analyses.

** Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analyses were performed by direct injection.

*** Number of days after 1st RTI analysis date.

+ An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A17

ACTIVITY		COMPOUND			
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(1500)	(800)	(1500)	(800)	(1500)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(1502)	(837)	(1441)	(805)	(1489)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(1585 ± 48)	(904 ± 19)	(1642 ± 40)	(904 ± 29)	(1648 ± 53)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(1584 ± 48)	(844 ± 18)	(1645 ± 40)	(881 ± 28)	(1585 ± 51)
3rd RTI Analysis Day**	153	153	153	153	153
ppb	(1565 ± 29)	(859 ± 21)	(1468 ± 47)	(808 ± 11)	(1542 ± 25)
4th RTI Analysis Day**	507	507	507	507	507
ppb	(1554 ± 30)	(840 ± 22)	(1614 ± 48)	(883 ± 12)	(1527 ± 26)
5th RTI Analysis Day**	859	859	859	859	859
ppb	(1522 ± 26)	(811 ± 18)	(1501 ± 36)	(821 ± 18)	(1496 ± 23)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A17

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
			RTI QUALITY CONTROL***		
4th RTI Analysis Day	507	507	507	507	507
ppb	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concentration ppb	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	1703	1703	1703	1703	1703
ppb	(2112 ± 145)	(2316 ± 98)	(2125 ± 68)	(2840 ± 119)	(2484 ± 108)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A18

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(8000)	(4000)	(8000)	(8000)	(6000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(8400)	(3877)	(7938)	(7960)	(6061)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(9386 ± 284)	(4418 ± 94)**	(9486 ± 231)	(9458 ± 301)	(6555 ± 211)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(9400 ± 285)	(4318 ± 92)**	(9617 ± 234)	(9359 ± 297)	(6641 ± 214)
3rd RTI Analysis Day**	153	153	153	153	153
ppb	(8041 ± 161)	(3991 ± 108)	(8906 ± 256)	(9056 ± 105)	(6461 ± 101)
4th RTI Analysis Day**	506	506	506	506	506
ppb	(8082 ± 162)	(4111 ± 109)	(8938 ± 255)	(9082 ± 106)	(6468 ± 102)
5th RTI Analysis Day**	860	860	860	860	860
ppb	(7955 ± 280)	(4080 ± 74)	(8163 ± 173)	(8112 ± 174)	(5967 ± 94)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A18

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
	RTI QUALITY CONTROL***				
4th RTI Analysis Day	506	506	506	506	506
ppb	(2100 ± 17)	(2259 ± 9.0)	(2109 ± 14)	(2833 ± 10)	(2493 ± 28)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	860	860	860	860	860
ppb	(2097 ± 50)	(2307 ± 78)	(2108 ± 38)	(2828 ± 60)	(2465 ± 147)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A19

ACTIVITY	COMPOUND Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(6000)	(8000)	(4000)	(4000)	(8000)
1st Analysis Date ppb	9/26/85 (6084)	9/26/85 (7854)	9/26/85 (4155)	9/26/85 (4069)	9/26/85 (7824)
RTI ANALYSIS*					
1st RTI Analysis Date ppb	5/07/86 (8062 ± 244)	5/07/86 (9593 ± 205)	5/07/86 (4121 ± 100)	5/07/86 (4065 ± 129)	5/07/86 (9463 ± 304)
2nd RTI Analysis Day** ppb	68 (7240 ± 219)	68 (9730 ± 208)	68 (4579 ± 111)	68 (4667 ± 148)	68 (8999 ± 290)
3rd RTI Analysis Day** ppb	153 (7188 ± 120)	153 (8886 ± 213)	153 (4131 ± 132)	153 (4072 ± 53)	153 (8957 ± 134)
4th RTI Analysis Day** ppb	498 (7270 ± 121)	498 (8987 ± 214)	498 (4160 ± 133)	598 (4084 ± 54)	598 (9024 ± 154)
5th RTI Analysis Day** ppb	860 (6241 ± 129)	860 (8230 ± 286)	860 (4226 ± 110)	860 (4135 ± 91)	860 (7997 ± 202)
RTI QUALITY CONTROL***					
1st RTI Analysis Date ppb	5/07/86 (2279 ± 68)	5/07/86 (2328 ± 49)	5/07/86 (2044 ± 49)	5/07/86 (2868 ± 92)	5/07/86 (2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day ppb	68 (2226 ± 67)	68 (2284 ± 48)	68 (2194 ± 53)	68 (2909 ± 93)	68 (2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A19

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
	RTI QUALITY CONTROL***				
3rd RTI Analysis Day ppb	153 (2505 ± 50)	153 (2985 ± 81)	153 (2784 ± 89)	153 (2534 ± 33)	153 (2472 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis Day ppb	498 (2092 ± 15)	498 (2278 ± 11)	498 (2105 ± 14)	498 (2839 ± 10)	498 (2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day ppb	860 (2097 ± 50)	860 (2307 ± 78)	860 (2108 ± 38)	860 (2829 ± 60)	860 (2465 ± 167)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A20

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(6000)	(8000)	(4000)	(4000)	(8000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(6012)	(7829)	(4103)	(4055)	(7841)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(6731 ± 204)	(9356 ± 200)	(4764 ± 116)	(4295 ± 137)	(9064 ± 292)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(7340 ± 222)	(9521 ± 203)	(4739 ± 115)	(4784 ± 152)	(9142 ± 294)
3rd RTI Analysis Day**	153	153	153	153	153
ppb	(6913 ± 118)	(7904 ± 213)	(4618 ± 129)	(3998 ± 52)	(7844 ± 133)
4th RTI Analysis Day**	498	498	498	498	498
ppb	(7114 ± 119)	(7984 ± 214)	(4687 ± 130)	(4017 ± 152)	(8014 ± 133)
5th RTI Analysis Day**	on audit	on audit	on audit	on audit	on audit
ppb					
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A20

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL* **					
4th RTI Analysis Day	498	498	498	498	498
ppb	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	860	860	860	860	860
ppb	(2097 ± 50)	(2307 ± 78)	(2108 ± 38)	(2829 ± 60)	(2465 ± 167)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A21

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(3000)	(6000)	(3000)	(6000)	(4000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(2990)	(5979)	(3131)	(6139)	(4010)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(3220 ± 98)	(6277 ± 134)	(3157 ± 77)	(7127 ± 227)	(3994 ± 129)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(3246 ± 98)	(6808 ± 145)	(3416 ± 83)	(7008 ± 223)	(4238 ± 137)
3rd RTI Analysis Day**	153	153	153	153	153
ppb	(2968 ± 59)	(5950 ± 161)	(2940 ± 94)	(6024 ± 78)	(3983 ± 68)
4th RTI Analysis Day**	on audit	on audit	on audit	on audit	on audit
ppb					
5th RTI Analysis Day**	861	861	861	861	861
ppb	(2979 ± 66)	(6134 ± 142)	(3134 ± 57)	(6136 ± 128)	(3981 ± 88)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A21

ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
	COMPOUND				
RTI QUALITY CONTROL* **					
4th RTI Analysis Day	498	498	498	498	498
ppb	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	861	861	861	861	861
ppb	(2132 ± 65)	(2345 ± 61)	(2173 ± 34)	(2899 ± 61)	(2469 ± 53)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A22

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
MANUFACTURER ANALYSIS					
Theoretical ppb	(800)	(1500)	(800)	(1500)	(800)
1st Analysis Date ppb	9/26/85 (796)	9/26/85 (1461)	9/26/85 (795)	9/26/85 (1497)	9/26/85 (783)
RTI ANALYSIS*					
1st RTI Analysis Date ppb	5/07/86 (854 ± 26)	5/07/86 (1365 ± 29)	5/07/86 (784 ± 19)	5/07/86 (1533 ± 49)	5/07/86 (813 ± 26)
2nd RTI Analysis Day** ppb	68 (839 ± 25)	68 (1539 ± 33)	68 (846 ± 21)	68 (1587 ± 51)	68 (823 ± 27)
3rd RTI Analysis Day** ppb	153 (774 ± 15)	153 (1506 ± 41)	153 (840 ± 27)	153 (1559 ± 20)	153 (805 ± 14)
4th RTI Analysis Day** ppb	on audit	on audit	on audit	on audit	on audit
5th RTI Analysis Day** ppb	859 (803 ± 46)	859 (1550 ± 65)	859 (856 ± 63)	859 (1555 ± 72)	859 (810 ± 36)
RTI QUALITY CONTROL***					
1st RTI Analysis Date ppb	5/07/86 (2279 ± 68)	5/07/86 (2328 ± 49)	5/07/86 (2044 ± 49)	5/07/86 (2868 ± 92)	5/07/86 (2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day ppb	68 (2226 ± 67)	68 (2284 ± 48)	68 (2194 ± 53)	68 (2909 ± 93)	68 (2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day ppb	153 (2505 ± 50)	153 (2985 ± 81)	153 (2784 ± 89)	153 (2534 ± 33)	153 (2472 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A22

ACTIVITY	COMPOUND Carbon tetra-chloride	 Chloroform	 Perchloro-ethylene	 Benzene	 Vinyl chloride
RTI QUALITY CONTROL* **					
4th RTI Analysis Day ppb	498 (2092 ± 15)	498 (2278 ± 11)	498 (2106 ± 14)	498 (2839 ± 10)	498 (2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day ppb	859 (2112 ± 145)	859 (2316 ± 98)	859 (2125 ± 68)	859 (2840 ± 119)	859 (2484 ± 108)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

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* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A23

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(800)	(1500)	(800)	(1500)	(800)
1st Analysis Date ppb	9/26/85 (789)	9/26/85 (1431)	9/26/85 (789)	9/26/85 (1459)	9/26/85 (780)
RTI ANALYSIS*					
1st RTI Analysis Date ppb	5/07/86 (822 ± 25)	5/07/86 (1313 ± 28)	5/07/86 (789 ± 19)	5/07/86 (1560 ± 50)	5/07/86 (857 ± 28)
2nd RTI Analysis Day** ppb	68 (839 ± 25)	68 (1492 ± 32)	68 (832 ± 20)	68 (1560 ± 50)	68 (834 ± 27)
3rd RTI Analysis Day** ppb	153 (783 ± 16)	153 (1453 ± 39)	153 (806 ± 26)	153 (1486 ± 19)	153 (800 ± 14)
4th RTI Analysis Day** ppb	498 (780 ± 15)	498 (1421 ± 38)	498 (813 ± 27)	498 (1474 ± 18)	498 (786 ± 15)
5th RTI Analysis Day** ppb	859 (806 ± 20)	859 (1488 ± 26)	859 (809 ± 13)	859 (1479 ± 23)	859 (799 ± 17)
RTI QUALITY CONTROL***					
1st RTI Analysis Date ppb	5/07/86 (2279 ± 68)	5/07/86 (2328 ± 49)	5/07/86 (2044 ± 49)	5/07/86 (2868 ± 92)	5/07/86 (2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day ppb	68 (2226 ± 67)	68 (2284 ± 48)	68 (2194 ± 53)	68 (2909 ± 93)	68 (2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day ppb	153 (2505 ± 50)	153 (2985 ± 81)	153 (2784 ± 89)	153 (2534 ± 33)	153 (2472 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A23

ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL* **					
4th RTI Analysis Day ppb	498 (2092 ± 15)	498 (2278 ± 11)	498 (2105 ± 14)	498 (2839 ± 10)	498 (2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day ppb	859 (2112 ± 145)	859 (2316 ± 98)	859 (2125 ± 68)	859 (2840 ± 119)	859 (2484 ± 108)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A24

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(1500)	(800)	(1500)	(800)	(1500)
1st Analysis Date ppb	9/26/85 (1480)	9/26/85 (811)	9/26/85 (1495)	9/26/85 (798)	9/26/85 (1491)
RTI ANALYSIS*					
1st RTI Analysis Date ppb	5/07/86 (1582 ± 48)	5/07/86 (803 ± 17)	5/07/86 (1534 ± 37)	5/07/86 (760 ± 24)	5/07/86 (1492 ± 48)
2nd RTI Analysis Day** ppb	68 (1571 ± 47)	68 (830 ± 18)	68 (1530 ± 37)	68 (852 ± 27)	68 (1535 ± 50)
3rd RTI Analysis Day** ppb	153 (1553 ± 29)	153 (784 ± 21)	153 (1503 ± 46)	153 (824 ± 11)	153 (1498 ± 25)
4th RTI Analysis Day** ppb	507 (1555 ± 30)	507 (801 ± 20)	507 (1512 ± 47)	507 (815 ± 12)	507 (1481 ± 24)
5th RTI Analysis Day** ppb	860 (1565 ± 65)	860 (844 ± 38)	860 (1633 ± 162)	860 (885 ± 88)	860 (1515 ± 49)
RTI QUALITY CONTROL***					
1st RTI Analysis Date ppb	5/07/86 (2279 ± 68)	5/07/86 (2328 ± 49)	5/07/86 (2044 ± 49)	5/07/86 (2868 ± 92)	5/07/86 (2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day ppb	68 (2226 ± 67)	68 (2284 ± 48)	68 (2194 ± 53)	68 (2909 ± 93)	68 (2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day ppb	153 (2505 ± 50)	153 (2985 ± 81)	153 (2784 ± 89)	153 (2534 ± 33)	153 (2472 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A24

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
			RTI QUALITY CONTROL***		
4th RTI Analysis Day	507	507	507	507	507
ppb	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concentration ppb	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	860	860	860	860	860
ppb	(2132 ± 65)	(2345 ± 61)	(2279 ± 67)	(2899 ± 67)	(2469 ± 53)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A25

	COMPOUND				
ACTIVITY	**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
MANUFACTURER ANALYSIS					
Theoretical ppb	(4000)	(3000)	(6000)	(3000)	(3000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(4166)	(2986)	(6095)	(3014)	(2932)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(4582 ± 138)	(3032 ± 66)	(6770 ± 165)	(3047 ± 97)	(3574 ± 116)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(4308 ± 130)	(3200 ± 68)	(6765 ± 164)	(3283 ± 104)	(3122 ± 101)
3rd RTI Analysis Day**	153	153	153	153	153
ppb	(3918 ± 78)	(2924 ± 39)	(5881 ± 188)	(2964 ± 39)	(2952 ± 50)
4th RTI Analysis Day**	on audit	on audit	on audit	on audit	on audit
ppb					
5th RTI Analysis Day**	859	859	859	859	859
ppb	(4054 ± 61)	(3065 ± 61)	(6074 ± 154)	(3046 ± 39)	(2976 ± 61)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A25

ACTIVITY	COMPOUND				
	Carbon tetrachloride	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
RTI QUALITY CONTROL* **					
4th RTI Analysis Day ppb	507 (2472 ± 26)	507 (2272 ± 11)	507 (2106 ± 14)	507 (2821 ± 8.0)	507 (2472 ± 28)
NBS Concentration ppb	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day ppb	859 (2097 ± 50)	859 (2307 ± 78)	859 (2108 ± 38)	859 (2828 ± 60)	859 (2465 ± 147)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A26

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(8000)	(4000)	(8000)	(8000)	(6000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(8506)	(3892)	(7810)	(7951)	(6037)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(9734 ± 294)	(4243 ± 90)	(9753 ± 236)	(9540 ± 302)	(7229 ± 234)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(9632 ± 291)	(4405 ± 94)	(9788± 237)	(9491 ± 301)	(7009 ± 227)
3rd RTI Analysis Day**	154	154	154	154	154
ppb	(8028 ± 161)	(3992 ± 108)	(8209 ± 250)	(9116 ± 104)	(6952 ± 101)
4th RTI Analysis Day**	498	498	498	498	498
ppb	(8076 ± 162)	(4160 ± 109)	(8406 ± 251)	(9209 ± 105)	(6914 ± 102)
5th RTI Analysis Day**	859	859	859	859	859
ppb	(8038 ± 385)	(4125 ± 119)	(8209 ± 194)	(8131 ± 182)	(5975 ± 196)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2509 ± 50)	(2980 ± 80)	(2794 ± 89)	(2533 ± 33)	(2465 ± 42)
NBS Concentration ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A26

ACTIVITY	COMPOUND				
	Carbon tetrachloride	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
	RTI QUALITY CONTROL* **				
4th RTI Analysis Day	498	498	498	498	498
ppb	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	859	859	859	859	859
ppb	(2132 ± 65)	(2345 ± 61)	(2173 ± 34)	(2899 ± 67)	(2469 ± 53)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

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* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A27

ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(3000)	(6000)	(3000)	(6000)	(4000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(2953)	(5942)	(3143)	(6119)	(3947)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(3421 ± 103)	(6435 ± 137)	(3239 ± 79)	(6820 ± 216)	(4049 ± 131)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(3231 ± 98)	(7191 ± 153)	(3345 ± 81)	(7177 ± 227)	(4158 ± 135)
3rd RTI Analysis Day**	154	154	154	154	154
ppb	(2998 ± 60)	(5880 ± 159)	(2951 ± 94)	(5989 ± 71)	(3917 ± 67)
4th RTI Analysis Day**	498	498	498	498	498
ppb	(2987 ± 59)	(6097 ± 160)	(3230 ± 95)	(6058 ± 72)	(4093 ± 68)
5th RTI Analysis Day**	857	857	857	857	857
ppb	(2907 ± 91)	(6071 ± 118)	(3053 ± 35)	(6032 ± 101)	(3932 ± 59)
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A27

	COMPOUND				
ACTIVITY	**Carbon tetra-chloride**	**Chloroform**	**Perchloro-ethylene**	**Benzene**	**Vinyl chloride**
			RTI QUALITY CONTROL***		
4th RTI Analysis Day	507	507	507	507	507
ppb	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concentration ppb	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	857	857	857	857	857
ppb	(2112 ± 145)	(2316 ± 98)	(2125 ± 68)	(2840 ± 119)	(2484 ± 108)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A28

ACTIVITY	COMPOUND Carbon tetra-chloride	 Chloroform	 Perchloro-ethylene	 Benzene	 Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(4000)	(3000)	(6000)	(3000)	(3000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
ppb	(4041)	(2915)	(6105)	(3013)	(2937)
RTI ANALYSIS*					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(4305 ± 130)	(3076 ± 65)	(6937 ± 168)	(3100 ± 98)	(3412 ± 110)
2nd RTI Analysis Day**	68	68	68	68	68
ppb	(4474 ± 135)	(3336 ± 71)	(6959 ± 169)	(3448 ± 109)	(3342 ± 108)
3rd RTI Analysis Day**	on audit	on audit	on audit	on audit	on audit
ppb					
4th RTI Analysis Day**	507	507	507	507	507
ppb	(4432 ± 130)	(3287 ± 70)	(6940 ± 166)	(3396 ± 100)	(3385 ± 102)
5th RTI Analysis Day**	on audit	on audit	on audit	on audit	on audit
ppb					
RTI QUALITY CONTROL***					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
ppb	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
ppb	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concentration					
ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
ppb	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concentration					
ppb	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)

(continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (continued)
CYLINDER I-A28

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
RTI QUALITY CONTROL* **					
4th RTI Analysis Day	507	507	507	507	507
ppb	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concentration ppb	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
5th RTI Analysis Day	857	857	857	857	857
ppb	(2112 ± 145)	(2316 ± 98)	(2125 ± 68)	(2840 ± 119)	(2484 ± 108)
NBS Concentration ppb	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

* Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The previous analyses were performed by direct injection. Calibrations were performed using an NBS primary standard.

** Number of days after 1st RTI analysis date.

*** An NBS primary standard was used as internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A30

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(19.6)	(9.82)	(19.6)	(9.84)	(30.0)
1st Analysis Date	3/13/87	4/30/87	4/30/87	4/30/87	4/30/87
ppb	(18.8)	(9.61)	(18.1)	(9.91)	(26.9)
RTI ANALYSIS**					
1st RTI Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
ppb	(20.8 ± 2.0)	(10.1 ± 0.3)	(20.7 ± 0.6)	(9.79 ± 0.4)	(28.0 ± 1.9)
2nd RTI Analysis Day***	50	50	50	50	50
ppb	(20.7 ± 2.0)	(9.50 ± 0.3)	(20.7 ± 0.6)	(9.51 ± 0.4)	(27.0 ± 1.9)
3rd RTI Analysis Day***	475	475	475	475	475
ppb	(20.0 ± 1.4)	(9.83 ± 0.6)	(21.3 ± 2.1)	(10.4 ± 0.9)	(30.1 ± 2.0)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
ppb	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd RTI Analysis Day	50	50	50	50	50
ppb	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day	475	475	475	475	475
ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.5)	(4.77 ± 0.4)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A31

ACTIVITY	COMPOUND Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(20.0)	(10.0)	(20.0)	(10.0)	(30.0)
1st Analysis Date ppb	3/13/87 (18.8)	4/30/87 (9.83)	4/30/87 (19.0)	4/30/87 (10.1)	4/30/87 (27.3)
RTI ANALYSIS**					
1st RTI Analysis Date ppb	7/06/87 (21.1 ± 2.0)	7/06/87 (10.2 ± 0.3)	7/06/87 (21.0 ± 0.6)	7/06/87 (10.0 ± 0.4)	7/06/87 (27.1 ± 1.9)
2nd RTI Analysis Day*** ppb	63 (21.1 ± 2.0)	63 (10.2 ± 0.3)	63 (20.6 ± 0.6)	63 (10.0 ± 0.5)	63 (27.0 ± 1.9)
3rd RTI Analysis Day*** ppb	415 (20.8 ± 2.9)[+]	415 (12.0 ± 1.4)	415 (22.9 ± 1.6)	415 (11.0 ± 1.0)	415 (32.9 ± 3.8)
RTI QUALITY CONTROL[‡]					
1st RTI Analysis Date ppb	7/06/87 (20.6 ± 2.0)	7/06/87 (23.1 ± 0.2)	7/06/87 (30.0 ± 0.8)	7/06/87 (19.0 ± 0.8)	7/06/87 (24.5 ± 1.7)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd RTI Analysis Day ppb	63 (17.6 ± 1.7)	63 (9.50 ± 0.3)	63 (22.7 ± 0.6)	63 (16.6 ± 0.7)	63 (15.7 ± 1.1)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day ppb	415[+] (10.5 ± 1.1)	415 (10.3 ± 1.0)	415 (13.5 ± 1.0)	415 (10.1 ± 0.9)	415 (15.5 ± 2.3)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

[+] ECD analysis data.

[‡] An NBS primary standard was used as an internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A32

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical					
ppb	(20.1)	(10.1)	(20.1)	(10.1)	(30.0)
1st Analysis Date	3/23/87	4/10/87	4/10/87	4/10/87	4/10/87
ppb	(19.7)	(9.67)	(18.2)	(10.3)	(26.9)
RTI ANALYSIS**					
1st RTI Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
ppb	(20.4 ± 1.9)	(10.1 ± 0.3)	(20.8 ± 0.6)	(9.72 ± 0.4)	(26.8 ± 1.8)
2nd RTI Analysis Day***	62	62	62	62	62
ppb	(20.8 ± 2.0)	(10.3 ± 0.3)	(20.3 ± 0.6)	(10.4 ± 0.5)	(30.5 ± 2.1)
3rd RTI Analysis Day***	413	413	413	413	413
ppb	(20.4 ± 2.2) +	(12.2 ± 1.3)	(22.9 ± 1.5)	(11.1 ± 1.1)	(32.5 ± 4.7)
RTI QUALITY CONTROL‡					
1st RTI Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
ppb	(21.7 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concentration					
ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 2.5)
2nd RTI Analysis Day	62	62	62	62	62
ppb	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concentration					
ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day	413	413	413	413	413
ppb	(10.5 ± 1.0)	(10.3 ± 1.0)	(13.5 ± 1.0)	(10.1 ± 0.9)	(15.5 ± 2.3)
NBS Concentration					
ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ ECD analysis data.

‡ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A33

ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(20.1)	(10.1)	(20.2)	(10.1)	(30.0)
1st Analysis Date	3/13/87	4/08/87	4/08/87	4/08/87	4/08/87
ppb	(19.5)	(10.3)	(19.7)	(10.7)	(26.0)
RTI ANALYSIS**					
1st RTI Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
ppb	(21.4 ± 2.0)	(10.6 ± 0.3)	(20.6 ± 0.6)	(10.3 ± 0.5)	(29.4 ± 2.0)
2nd RTI Analysis Day***	on audit	on audit	on audit	on audit	on audit
ppb					
3rd RTI Analysis Day***	426	426	426	426	426
ppb	(20.9 ± 1.8)	(11.2 ± 1.2)	(21.2 ± 1.9)	(10.4 ± 1.1)	(29.1 ± 2.1)
RTI QUALITY CONTROL +					
1st RTI Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
ppb	(21.2 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concentration ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(23.0 ± 1.0)
2nd RTI Analysis Day	62	62	62	62	62
ppb	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.1 ± 1.1)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day	426	426	426	426	426
ppb	(11.3 ± 1.0)	(10.3 ± 1.1)	(13.7 ± 1.1)	(10.1 ± 1.0)	(15.3 ± 1.2)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A34 (In Air)

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(10.2)	(15.2)	(10.2)	(10.2)	(15.0)
1st Analysis Date		3/12/87	5/01/87	5/01/87	5/01/87	5/01/87
	ppb	(9.48)	(15.2)	(9.67)	(10.2)	(14.0)
RTI ANALYSIS**						
1st RTI Analysis Date		7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	ppb	(10.8 ± 1.0)	(16.1 ± 0.5)	(11.1 ± 0.3)	(10.3 ± 0.5)	(15.2 ± 1.0)
2nd RTI Analysis Day***		62	62	62	62	62
	ppb	(9.50 ± 0.9)	(14.9 ± 0.4)	(11.5 ± 0.3)	(10.4 ± 0.5)	(14.6 ± 1.0)
3rd RTI Analysis Day***		474	474	474	474	474
	ppb	(10.3 ± 0.6)	(15.3 ± 0.8)	(11.1 ± 0.9)	(10.3 ± 0.6)	(15.2 ± 1.0)
RTI QUALITY CONTROL +						
1st RTI Analysis Date		7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	ppb	(21.2 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concentration	ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd RTI Analysis Day		62	62	62	62	62
	ppb	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concentration	ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day		474	474	474	474	474
	ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.3)	(4.77 ± 0.4)
NBS Concentration	ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A35

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(10.3)	(30.9)	(10.3)	(30.9)	(20.0)
1st Analysis Date		3/03/87	5/01/87	5/01/87	5/01/87	5/01/87
	ppb	(9.85)	(30.3)	(9.85)	(31.1)	(18.2)
RTI ANALYSIS**						
1st RTI Analysis Date		7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	ppb	(9.69 ± 0.9)	(31.4 ± 0.9)	(10.9 ± 0.3)	(30.8 ± 1.4)	(21.5 ± 1.5)
2nd RTI Analysis Day***		50	50	50	50	50
	ppb	(9.66 ± 0.9)	(30.9 ± 0.9)	(10.9 ± 0.3)	(30.6 ± 1.3)	(21.2 ± 1.5)
3rd RTI Analysis Day***		415	415	415	415	415
	ppb	(9.79 ± 1.1) +	(33.7 ± 4.4)	(10.6 ± 1.1)	(30.0 ± 3.8)	(20.0 ± 3.0)
RTI QUALITY CONTROL‡						
1st RTI Analysis Date		7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	ppb	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concentration	ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd RTI Analysis Day		50	50	50	50	50
	ppb	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concentration	ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day		415	415	415	415	415
	ppb	(10.5 ± 1.1) +	(10.3 ± 1.0)	(13.5 ± 1.0)	(10.1 ± 0.9)	(15.5 ± 2.3)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ ECD analysis data.

‡ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A36

		COMPOUND				
ACTIVITY		**Carbon tetrachloride**	**Chloroform**	**Perchloroethylene**	**Benzene**	**Vinyl chloride**
MANUFACTURER ANALYSIS						
Theoretical	ppb	(10.3)	(30.9)	(10.3)	(30.9)	(20.0)
1st Analysis Date		3/14/87	4/07/87	4/07/87	4/30/87	4/07/87
	ppb	(10.3)	(23.9)	(8.65)	(30.7)	(18.2)
RTI ANALYSIS**						
1st RTI Analysis Date		7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	ppb	(10.8 ± 1.0)	(23.3 ± 0.7)	(7.58 ± 0.2)	(30.4 ± 1.3)	(22.2 ± 1.5)
2nd RTI Analysis Day***		50	50	50	50	50
	ppb	(11.1 ± 1.1)	(22.5 ± 0.6)	(7.60 ± 0.2)	(29.1 ± 1.3)	(21.5 ± 1.5)
3rd RTI Analysis Day***		426	426	426	426	426
	ppb	(11.2 ± 0.8)	(25.2 ± 2.3)	(7.63 ± 0.7)	(29.0 ± 2.5)	(19.7 ± 1.3)
RTI QUALITY CONTROL +						
1st RTI Analysis Date		7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	ppb	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concentration	ppb	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd RTI Analysis Day		50	50	50	50	50
	ppb	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concentration	ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day		426	426	426	426	426
	ppb	(11.2 ± 0.8)	(10.3 ± 1.1)	(13.7 ± 1.1)	(10.1 ± 1.0)	(15.9 ± 1.2)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A37

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(10.0)	(30.1)	(10.0)	(30.1)	(20.0)
1st Analysis Date		3/04/87	4/07/87	4/07/87	4/30/87	4/07/87
	ppb	(9.71)	(29.2)	(8.80)	(30.4)	(20.3)
RTI ANALYSIS**						
1st RTI Analysis Date		7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
	ppb	(9.83 ± 0.9)	(30.8 ± 0.9)	(10.7 ± 0.3)	(30.9 ± 1.4)	(22.6 ± 1.6)
2nd RTI Analysis Day***		48	48	48	48	48
	ppb	(10.1 ± 1.0)	(29.6 ± 0.8)	(10.8 ± 0.3)	(30.1 ± 1.3)	(22.0 ± 1.5)
3rd RTI Analysis Day***		425	425	425	425	425
	ppb	(10.5 ± 0.9)	(33.3 ± 3.1)	(10.6 ± 0.8)	(29.7 ± 2.7)	(19.6 ± 1.3)
RTI QUALITY CONTROL+						
1st RTI Analysis Date		7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
	ppb	(20.6 ± 2.0)	NA	NA	(18.7 ± 0.8)	NA
NBS Concentration	ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
2nd RTI Analysis Day		48	48	48	48	48
	ppb	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concentration	ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day		425	425	425	425	425
	ppb	(11.3 ± 1.0)	(10.3 ± 1.1)	(13.7 ± 1.1)	(10.1 ± 1.0)	(15.3 ± 1.2)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A38

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(10.1)	(30.3)	(10.1)	(30.3)	(20.0)
1st Analysis Date	3/03/87	4/06/87	4/06/87	4/06/87	4/06/87
ppb	(9.55)	(31.2)	(10.3)	(29.1)	(18.8)
RTI ANALYSIS**					
1st RTI Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
ppb	(9.74 ± 0.9)	(30.9 ± 0.9)	(11.1 ± 0.3)	(30.5 ± 1.3)	(20.2 ± 1.4)
2nd RTI Analysis Day***	61	61	61	61	61
ppb	(10.5 ± 1.0)	(30.7 ± 0.9)	(11.3 ± 0.3)	(30.4 ± 1.3)	(19.8 ± 1.4)
3rd RTI Analysis Day***	413	413	413	413	413
ppb	(9.99 ± 1.2)+	(33.6 ± 3.2)	(10.7 ± 0.8)	(30.2 ± 3.4)	(19.6 ± 2.0)
RTI QUALITY CONTROL‡					
1st RTI Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
ppb	(21.2 ± 2.0)	NA	NA	(19.1 ± 0.8)	NA
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
2nd RTI Analysis Day	61	61	61	61	61
ppb	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concentration ppb	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
3rd RTI Analysis Day	413	413	413	413	413
ppb	(10.5 ± 1.1)+	(10.3 ± 1.0)	(13.5 ± 1.0)	(10.1 ± 0.9)	(15.5 ± 2.3)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)

* An NBS primary standard was used for calibration.

** All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

*** Number of days after 1st RTI analysis.

+ ECD analysis data.

‡ An NBS primary standard was used as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A39

		COMPOUND				
ACTIVITY		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(15.2)	(15.3)	(15.2)	(15.2)	(12.3)
1st Analysis Date		10/20/87	10/20/87	10/20/87	10/20/87	10/20/87
	ppb	(14.3)	(15.1)	(14.8)	(15.4)	(15.0)
2nd Analysis Date		12/18/87	12/18/87	12/18/87	12/18/87	12/18/87
	ppb	(14.8)	(15.3)	(14.4)	(15.3)	(13.3)
RTI ANALYSIS*						
1st RTI Analysis Date		4/29/88	4/29/88	4/29/88	4/29/88	4/29/88
	ppb	(16.5 ± 5.3)	(17.7 ± 3.1)	(17.2 ± 8.3)	(16.1 ± 4.9)	(15.5 ± 4.9)
2nd RTI Analysis Day***		116	116	116	116	116
	ppb	(15.2 ± 1.3)	(17.4 ± 1.2)	(17.0 ± 1.3)	(16.0 ± 1.5)	(15.4 ± 1.1)
3rd RTI Analysis Day***		176	176	176	176	176
	ppb	(15.5 ± 0.9)	(15.4 ± 0.9)	(16.1 ± 0.9)	(15.8 ± 0.9)	(15.0 ± 0.9)
RTI QUALITY CONTROL**						
1st RTI Analysis Date		4/29/88	4/29/88	4/29/88	4/29/88	4/29/88
	ppb	(11.5 ± 3.2)	(10.6 ± 1.5)	(13.8 ± 1.1)	(10.2 ± 2.2)	(15.8 ± 3.6)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
2nd RTI Analysis Day		116	116	116	116	116
	ppb	(11.0 ± 1.2)	(10.7 ± 0.8)	(14.1 ± 1.1)	(10.6 ± 1.0)	(16.3 ± 1.4)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
3rd RTI Analysis Day		176	176	176	176	176
	ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.5)	(4.77 ± 0.4)
NBS Concentration	ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration.
** An NBS primary standard was used for quality control.
*** Number of days after RTI first analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A40

	COMPOUND				
ACTIVITY	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS					
Theoretical ppb	(15.7)	(15.5)	(15.5)	(15.4)	(12.3)
1st Analysis Date	10/21/87	10/20/87	10/20/87	10/20/87	10/20/87
ppb	(13.6)	(14.9	(14.3)	(15.4)	(15.0)
2nd Analysis Date	12/18/87	12/18/87	12/18/87	12/18/87	12/18/87
ppb	(14.6)	(13.5)	(14.6)	(15.7)	(13.6)
RTI ANALYSIS*					
1st RTI Analysis Date	4/29/88	4/29/88	4/29/88	4/29/88	4/29/88
ppb	(16.3 ± 2.1)	(17.10 ± 2.6)	(17.6 ± 5.9)	NA	(15.1 ± 6.6)
2nd RTI Analysis Day***	116	116	116	116	116
ppb	(15.3 ± 1.4)	(17.5 ± 1.2)	(16.9 ± 1.1)	(16.0 ± 1.3)	(15.3 ± 1.1)
3rd RTI Analysis Day***	176	176	176	176	176
ppb	(15.7 ± 1.0)	(15.5 ± 1.0)	(16.6 ± 1.4)	(16.1 ± 1.1)	(15.0 ± 1.0)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	4/29/88	4/29/88	4/29/88	4/29/88	4/29/88
ppb	(11.5 ± 3.2)	(10.6 ± 1.5)	(13.8 ± 1.1)	(10.2 ± 2.8)	(15.8 ± 3.6)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
2nd RTI Analysis Day	116	116	116	116	116
ppb	(11.0 ± 1.2)	(10.7 ± 0.8)	(14.1 ± 1.1)	(10.6 ± 1.0)	(16.3 ± 1.4)
NBS Concentration ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
3rd RTI Analysis Day	176	176	176	176	176
ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.5)	(5.77 ± 0.4)
NBS Concentration ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration.
** An NBS primary standard was used for quality control.
*** Number of days after RTI first analysis.
NA = Not analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A41

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(68)	(68)	(68)	(69)	(70)
1st Analysis Date		10/23/87	10/22/87	10/22/87	10/22/87	10/22/87
	ppb	(63.9)	(66.3)	(74.0)	(67.5)	(67.0)
2nd Analysis Date		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
	ppb	(67.9)	(62.8)	(66.6)	(66.9)	(66.6)
RTI ANALYSIS*						
1st RTI Analysis Date		4/28/88	4/28/88	4/28/88	4/28/88	4/28/88
	ppb	(76.6 ± 20)	(75.8 ± 9.7)	(75.5 ± 13)	(65.9 ± 11)	(71.0 ± 14)
2nd RTI Analysis Day***		117	117	117	117	117
	ppb	(69.1 ± 5.7)	(74.6 ± 5.1)	(75.6 ± 5.5)	(65.9 ± 5.5)	(70.7 ± 6.9)
3rd RTI Analysis Day***		177	177	177	177	177
	ppb	(72.7 ± 4.1)	(66.1 ± 3.9)	(72.4 ± 5.0)	(65.3 ± 4.2)	(69.2 ± 4.5)
RTI QUALITY CONTROL**						
1st RTI Analysis Date		4/28/88	4/28/88	4/28/88	4/28/88	4/28/88
	ppb	(11.6 ± 5.5)	(10.3 ± 3.4)	(13.6 ± 1.9)	(10.10 ± 2.3)	(15.7 ± 3.6)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
2nd RTI Analysis Day		117	117	117	117	117
	ppb	(11.0 ± 1.2)	(10.7 ± 0.9)	(14.1 ± 1.1)	(10.6 ± 1.0)	(16.3 ± 1.4)
NBS Concentration	ppb	(10.8 ± 0.5)	(10.1 ± 0.5)	(13.3 ± 0.7)	(10.1 ± 0.5)	(15.1 ± 0.7)
3rd RTI Analysis Day		177	177	177	177	177
	ppb	(4.95 ± 0.3)	(5.12 ± 0.3)	(5.46 ± 0.4)	(5.43 ± 0.5)	(4.77 ± 0.4)
NBS Concentration	ppb	(4.91 ± 0.3)	(5.29 ± 0.3)	(5.15 ± 0.3)	(5.08 ± 0.3)	(4.45 ± 0.3)

* An NBS primary standard was used for calibration.
** An NBS primary standard was used for quality control.
*** Number of days after RTI first analysis.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A42

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl chloride
MANUFACTURER ANALYSIS						
Theoretical	ppb	(300)	(300)	(300)	(300)	(300)
1st Analysis Date		10/22/88	10/22/88	10/22/88	10/22/88	10/22/88
	ppb	(312)	(316)	(318)	(296)	(296)
2nd Analysis Date		12/18/88	12/18/88	12/18/88	12/18/88	12/18/88
	ppb	(318)	(302)	(321)	(315)	(294)
RTI ANALYSIS*						
1st RTI Analysis Date		5/3/88	5/3/88	5/3/88	5/3/88	5/3/88
	ppb	(302 ± 25)	(314 ± 33)	(307 ± 42)	(300 ± 14)	(281 ± 67)
2nd RTI Analysis Day***		129	129	129	129	129
	ppb	(301 ± 34)	(318 ± 31)	(311 ± 21)	(306 ± 20)	(288 ± 25)
3rd RTI Analysis Day***		204	204	204	204	204
	ppb	(290 ± 30)	(318 ± 14)	(309 ± 12)	(305 ± 7.1)	(294 ± 5.7)
RTI QUALITY CONTROL**						
1st RTI Analysis Date		5/3/88	5/3/88	5/3/88	5/3/88	5/3/88
	ppb	(159 ± 10)	(136 ± 15)	(150 ± 11)	(194 ± 9.4)	(201 ± 31)
NBS Concentration	ppb	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)
2nd RTI Analysis Day		129	129	129	129	129
	ppb	(155 ± 8.3)	(129 ± 8.2)	(138 ± 5.2)	(144 ± 4.7)	(162 ± 5.7)
NBS Concentration	ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)
3rd RTI Analysis Day		204	204	204	204	204
	ppb	(142 ± 9.6)	(121 ± 5.1)	(128 ± 4.5)	(134 ± 3.3)	(152 ± 3.1)
NBS Concentration	ppb	(141 ± 5.0)	(120 ± 7.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 5.0)

* An NBS primary standard was used for calibration.
** An NBS primary standard was used for quality control.
*** Number of days after RTI first analysis.

Stability Study for Group II Compounds*
Cylinder II-A1

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(161)	(164)	(164)	(161)	(149)	(150)	(151)	(162)	NC
1st Analysis Date ppb	3/05/84 (144)	3/05/84 (167)	3/05/84 (152)	3/05/84 (167)	3/05/84 (152)	3/07/84 (161)	3/07/84 (153)	3/05/84 (201)	NC
2nd Analysis Date ppb	4/03/84 (133)	4/03/84 (168)	4/03/84 (148)	4/03/84 (141)	4/03/84 (143)	4/04/84 (170)	4/04/84 (148)	4/03/84 (192)	NC
					RTI ANALYSIS**				
1st Analysis Date ppb	5/28/84 (145 ± 10)+	5/28/84 (194 ± 11)+	5/14/84 (147 ± 7.1)	5/14/84 (156 ± 8.0)	5/14/84*** (130 ± 4.4)+	5/14/84 (172 ± 6.7)	5/08/84*** (143 ± 5.9)+	5/08/84*** (157 ± 6.4)+	NC
2nd Analysis Day**** ppb	82 (130 ± 9.1)+	82 (187 ± 10)+	98 (145 ± 7.0)	99 (150 ± 7.7)	98 (153 ± 5.2)	98 (170 ± 6.6)	104 (168 ± 6.9)	104 (183 ± 7.5)	NC
3rd Analysis Day**** ppb	302 (110 ± 7.7)	302 (144 ± 7.9)	287 (140 ± 6.7)	302 (146 ± 7.4)	287 (160 ± 5.4)	287 (168 ± 6.6)	293 (173 ± 7.1)	293 177 ± 7.3)	NC
4th Analysis Day**** ppb	449 (112 ± 7.8)	449 (140 ± 7.7)	452 (141 ± 6.8)	452 (135 ± 6.9)	452 (161 ± 5.5)	452 (168 ± 6.6)	458 (164 ± 6.7)	458 (174 ± 7.1)	NC
5th Analysis Day**** ppb	750 on audit	750 on audit	775 on audit	771 on audit	775 on audit	775 on audit	775 on audit	771 on audit	NC
6th Analysis Day**** ppb	901 (126 ± 17)	901 (154 ± 7.4)	901 (142 ± 4.4)	901 (142 ± 4.4)	901 (156 ± 13)	901 (176 ± 7.5)	901 NA	901 (184 ± 7.4)	NC
7th Analysis Day**** ppb	1600 NA	1600 (138 ± 28)	1614 (144 ± 6.7)	1614 (144 ± 7.0)	1614 (155 ± 6.0)	1614 (198 ± 18)	1620 NA	1620 (185 ± 9.5)	NC

(continued)

Stability Study for Group II Compounds*
Cylinder II-A1 (continued)

Activity		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						RTI QUALITY CONTROL*****				
3rd Analysis Day		302	302	287	302	287	287	293	293	302
	ppb	(78.5 ± 5.5)	(132 ± 7.3)	(118 ± 5.7)	(131 ± 6.7)	(153 ± 5.2)	(190 ± 7.4)	(112 ± 4.6)	(149 ± 6.1)	(149 ± 7.5)
NBS Concen	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
4th Analysis Day		449	449	452	452	452	452	458	458	452
	ppb	(85.2 ±6.0)	(130 ± 7.2)	(120 ± 5.8)	(120 ± 6.1)	(154 ± 5.2)	(190 ± 7.4)	(119 ± 4.9)	(132 ± 5.4)	(139 ± 7.0)
NBS Concen	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
5th Analysis Day		750	750	775	771	775	775	775	771	765
	ppb	(13.0 ± 0.9)	(16.0 ± 0.9)	(11.5 ± 0.5)	(9.50 ± 0.4)	(10.7 ± 0.4)	(20.4 ± 0.8)	(10.6 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ±0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis Day		901	901	901	901	901	901	901	901	901
	ppb	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day		1600	1600	1614	1614	1614	1614	1620	1620	1620
	ppb	(161 ± 38)	(132 ± 20)	(131 ± 6.5)	(149 ± 6.6)	(138 ± 5.4)	(116 ± 10)	NA	(166 ± 8.9)	(143 ± 6.1)
NBS Concen.	ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 10)	(173 ± 5.0)	(160 ± 5.0)	(143 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.

**Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Calibration was performed using stainless steel sphere dilution method.

****Number of days after 1st RTI analysis date.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis. No quality control with NBS primary standards was performed during RTI 1st and 2nd analyses.

+ = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A2

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(167)	(169)	(169)	(167)	(149)	(150)	(151)	(168)	NC
1st Analysis Date ppb	3/16/84 (110)	3/16/84 (140)	3/16/84 (135)	3/16/84 (108)	3/16/84 (147)	3/20/84 (163)	3/20/84 (152)	3/16/84 (175)	NC
2nd Analysis Date ppb	4/03/84 (107)	4/03/84 (146)	4/03/84 (144)	4/03/84 (139)	4/03/84 (141)	4/05/84 (165)	4/05/84 (147)	4/03/84 (184)	NC
RTI ANALYSIS									
1st Analysis Date ppb	5/28/84 (124 ± 8.7)	5/28/84 (161 ± 8.9)	5/14/84 (146 ± 7.0)	5/14/84 (158 ± 8.1)	5/14/84** (129 ± 4.4)+	5/14/84 (169 ± 6.6)	5/08/84** (141 ± 5.8)+	5/08/84** (163 ± 6.7)+	NC
2nd Analysis Day*** ppb	82 (146 ± 10)+	82 (178 ± 9.8)+	98 (143 ± 6.9)	98 (150 ± 7.7)	98 (152 ± 5.2)	98 (167 ± 6.5)	104 (166 ± 6.8)	104 (189 ± 7.7)	NC
3rd Analysis Day*** ppb	302 (107 ± 7.5)	302 (130 ± 7.2)	287 (141 ± 6.8)	302 (136 ± 6.9)	287 (158 ± 5.4)	287 (165 ± 6.4)	293 (167 ± 6.8)	293 (186 ± 7.6)	NC
4th Analysis Day*** ppb	449 (109 ± 7.6)	449 (128 ± 7.0)	452 (139 ± 6.7)	452 (139 ± 7.1)	452 (158 ± 5.4)	452 (164 ± 6.4)	458 (148 ± 6.1)	458 (164 ± 6.7)	NC
5th Analysis Day*** ppb	749 (119 ± 8.3)	749 (159 ± 8.4)	777 (141 ± 6.9)	777 (156 ± 8.1)	777 (163 ± 5.1)	777 (178 ± 7.1)	783 (163 ± 6.3)	783 (197 ± 8.1)	NC
6th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
7th Analysis Day*** ppb	1600 NA	1600 (142 ± 24)	1614 (143 ± 6.7)	1614 (142 ± 6.4)	1614 (152 ± 5.8)	1614 (187 ± 17)	1620 NA	1620 (187 ± 11)	NC

(continued)

Stability Study for Group II Compounds*
Cylinder II-A2 (continued)

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						RTI QUALITY CONTROL****				
3rd Analysis Day	ppb	302 (78.5 ± 5.5)	302 (132 ± 7.3)	287 (118 ± 5.7)	302 (131 ± 6.7)	287 (153 ± 5.2)	287 (190 ± 7.4)	293 (112 ± 4.6)	293 (149 ± 6.1)	302 (149 ± 7.5)
NBS Concen.	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
4th Analysis Day	ppb	449 (85.2 ±6.0)	449 (135 ± 7.4)	452 (120 ± 5.8)	452 (120 ± 6.1)	452 (154 ± 5.2)	452 (190 ± 7.4)	458 (119 ± 4.9)	458 (132 ± 5.4)	452 (139 ± 7.0)
NBS Concen.	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
5th Analysis Day	ppb	749 (13.6 ± 0.9)	749 (16.1 ± 0.9)	777 (119 ± 6.0)	777 (126 ± 7.0)	777 (157 ± 5.0)	777 (180 ± 7.0)	783 (116 ± 4.0)	783 (158 ± 7.0)	783 (154 ± 8.0)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
6th Analysis Day	ppb	901 (12.8 ± 1.7)	901 (17.0 ± 0.8)	901 (11.5 ± 0.4)	901 (8.90 ± 0.3)	901 (10.8 ± 1.0)	901 (17.5 ± 0.7)	901 NA	901 (9.80 ± 0.4)	901 (11.7 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day	ppb	1600 (161 ± 38)	1600 (132 ± 20)	1614 (131 ± 6.5)	1614 (149 ± 6.6)	1614 (138 ± 5.4)	1614 (116 ± 10)	1620 NA	1620 (166 ± 8.9)	1614 (143 ± 6.1)
NBS Concen.	ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 10)	(173 ± 5.0)	(160 ± 5.0)	(143 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified.

**Calibration was performed using stainless steel sphere dilution method.

***Number of days after 1st RTI analysis date.

****NBS primary standard was analyzed as internal quality control on each day of RTI analysis unless otherwise indicated. No quality control with NBS primary standards was performed during RTI 1st and 2nd analyses.

+ = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A3

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	COMPOUND								
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(166)	(168)	(168)	(166)	(149)	(150)	(151)	(167)	NC
1st Analysis Date ppb	3/16/84 (120)	3/16/84 (133)	3/16/84 (142)	3/16/84 (111)	3/16/84 (154)	3/07/84 (169)	3/07/84 (161)	3/16/84 (205)	NC
2nd Analysis Date ppb	4/03/84 (104)	4/03/84 (138)	4/03/84 (151)	4/03/84 (143)	4/03/84 (144)	4/05/84 (172)	4/05/84 (153)	4/03/84 (208)	NC
RTI ANALYSIS									
1st Analysis Date ppb	5/28/84 (107 ± 7.5)	5/28/84 (151 ± 8.3)	5/14/84 (147 ± 7.1)	5/14/84 (163 ± 8.3)	5/14/84** (131 ± 4.5)+	5/14/84 (173 ± 6.7)	5/08/84** (144 ± 5.9)+	5/08/84** (165 ± 6.8)+	NC
2nd Analysis Day*** ppb	82 (146 ± 10)	82 (170 ± 9.4)	98 (145 ± 7.0)	98 (157 ± 8.0)	98 (155 ± 5.3)	98 (170 ± 6.6)	104 (170 ± 7.0)	104 (196 ± 8.0)	NC
3rd Analysis Day*** ppb	302 (106 ± 7.4)	302 (123 ± 6.8)+	287 (142 ± 6.8)	302 (139 ± 7.1)	287 (161 ± 5.5)	287 (168 ± 6.6)	293 (170 ± 7.0)	293 (192 ± 7.9)	NC
4th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
5th Analysis Day*** ppb	749 (140 ± 9.9)	749 (159 ± 8.4)	777 (143 ± 7.0)	777 (161 ± 8.3)	777 (168 ± 5.3)	777 (178 ± 7.1)	783 (168 ± 6.5)	783 (206 ± 8.5)	NC
6th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
7th Analysis Day*** ppb	1600 (155 ± 6.3)	1600 (134 ± 32)	1614 (186 ± 13)	1614 (143 ± 7.8)	1614 (155 ± 6.3)	1614 (190 ± 17)	1620 NA	1620 (163 ± 9.8)	NC

(continued)

Stability Study for Group II Compounds*
Cylinder II-A3 (continued)

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						RTI QUALITY CONTROL****				
3rd Analysis Day	ppb	302 (78.5 ± 5.5)	302 (132 ± 7.3)	287 (118 ± 5.7)	302 (131 ± 6.7)	287 (153 ± 5.2)	287 (190 ± 7.4)	293 (112 ± 4.6)	293 (149 ± 6.1)	0 (149 ± 7.5)
NBS Concen.	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
4th Analysis Day	ppb	449 (85.2 ±6.0)	449 (135 ± 7.4)	452 (120 ± 5.8)	452 (120 ± 6.1)	452 (154 ± 5.2)	452 (190 ± 7.4)	458 (119 ± 4.9)	458 (132 ± 5.4)	452 (139 ± 7.0)
NBS Concen.	ppb	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
5th Analysis Day	ppb	749 (13.6 ± 0.9)	749 (16.1 ± 0.8)	777 (119 ± 6.0)	777 (126 ± 7.0)	777 (157 ± 5.0)	777 (180 ± 7.0)	783 (116 ± 4.0)	783 (158 ± 7.0)	783 (154 ± 8.0)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
6th Analysis Day	ppb	901 (12.8 ± 1.7)	901 (17.0 ± 0.8)	901 (11.5 ± 0.4)	901 (8.90 ± 0.3)	901 (10.8 ± 1.0)	901 (17.5 ± 0.7)	901 NA	901 (9.80 ± 0.4)	901 (11.7 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day	ppb	1600 (161 ± 38)	1600 (132 ± 2.4)	1614 (131 ± 6.5)	1614 (149 ± 6.6)	1614 (138 ± 5.4)	1614 (116 ± 10)	1620 NA	1620 (166 ± 8.9)	1614 (143 ± 6.1)
NBS Concen.	ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 5.0)	(173 ± 5.0)	(160 ± 5.0)	(143 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified.

**Calibration was performed using stainless steel sphere dilution method.

***Number of days after 1st RTI analysis date.

****NBS primary standard was analyzed as internal quality control on each day of RTI analysis. No quality control with NBS primary standards was performed during RTI 1st and 2nd analysis.

+ = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A4

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					COMPOUND				
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(15.4)	(15.8)	(15.7)	(15.5)	(14.9)	(15.0)	(15.1)	(15.7)	(15.3)
1st Analysis Date ppb	3/15/84 (14.0)	3/15/84 (16.3)	3/15/84 (16.3)	3/15/84 (10.7)	3/21/84 (11.5)	3/21/84 (11.9)	3/21/84 (15.0)	3/15/84 (17.8)	3/15/84 (11.6)
2nd Analysis Date ppb	4/02/84 (14.0)	4/02/84 (16.2)	4/02/84 (17.5)	4/02/84 (11.5)	4/05/84 (13.3)	4/05/84 (12.5)	4/05/84 (14.6)	4/02/84 (16.1)	4/02/84 (15.3)
					RTI ANALYSIS				
1st Analysis Date ppb	5/24/84 (16.2 ± 1.1)	5/24/84 (20.2 ± 1.1)	5/14/84 (14.6 ± 0.7)	5/14/84 (15.3 ± 0.8)	5/14/84** (13.1 ± 0.4)+	5/14/84 (15.2 ± 0.6)	5/14/84** (13.7 ± 0.6)+	5/14/84** (11.3 ± 0.5)+	5/20/84 (16.9 ± 0.8)+
2nd Analysis Day*** ppb	87 (17.6 ± 1.2)	87 (19.4 ± 1.1)	98 (14.7 ± 0.7)	93 (14.4 ± 0.7)	98 (15.1 ± 0.5)	98 (15.4 ± 0.6)	98 (16.3 ± 0.7)	98 (16.5 ± 0.7)	93 (14.5 ± 0.7)
3rd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
4th Analysis Day*** ppb	454 (15.9 ± 1.1)	454 (19.0 ± 1.0)	449 (14.2 ± 0.7)	443 (15.5 ± 0.8)	449 (16.0 ± 0.5)	449 (15.0 ± 0.6)	449 (15.6 ± 0.6)	449 (14.5 ± 0.6)	443 (13.3 ± 0.7)
5th Analysis Day*** ppb	749 (14.9 ± 1.1)	749 (18.1 ± 1.0)	772 (13.2 ± 0.7)	772 (16.7 ± 0.9)	772 (15.9 ± 0.5)	772 (12.6 ± 0.5)	772 (15.5 ± 0.6)	772 (16.2 ± 0.7)	766 (16.3 ± 0.9)
6th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
7th Analysis Day*** ppb	1601 NA	1601 NA	1611 (15.3 ± 1.1)	1611 (14.3 ± 1.1)	1611**** (16.4 ± 1.2)	1611 (15.6 ± 1.0)	1611 NA	1611 (17.3 ± 1.7)	1607 (14.0 ± 0.8)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A4 (continued)

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						COMPOUND				
						RTI QUALITY CONTROL*****				
3rd Analysis Day***		309	309	297	310	297	297	297	297	310
	ppb	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.86 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.14 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day***		454	454	449	443	449	449	449	449	443
	ppb	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.10 ± 0.4)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day***		749	749	772	772	772	772	772	772	766
	ppb	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis Day***		901	901	901	901	901	901	901	901	901
	ppb	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day***		1601	1601	1611	1611	1611****	1611	1611	1611	1607
	ppb	(3.51 ± 2.7)	(6.01 ± 3.8)	(11.4 ± 0.9)	(10.7 ± 0.8)	(11.8 ± 0.9)	(11.3 ± 0.6)	NA	(10.9 ± 1.2)	(11.7 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified

**Calibration was performed using stainless steel sphere dilution method

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****NBS primary standard was analyzed as internal quality control on each day of RTI analysis. No quality control with NBS primary standards was performed during RTI 1st and 2nd analysis.

+ = Questionable value

NA = Not analyzed

Stability Study for Group II Compounds*
Cylinder II-A5

	COMPOUND								
Activity	**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(15.5)	(16.0)	(15.9)	(15.7)	(15.0)	(15.0)	(15.0)	(15.9)	(15.5)
1st Analysis Date ppb	3/14/84 (8.90)	3/14/84 (7.80)	3/14/84 (16.9)	3/14/84 (11.2)	3/21/84 (9.60)	3/21/84 (11.3)	3/21/84 (16.0)	3/14/84 (18.2)	3/14/84 (11.3)
2nd Analysis Date ppb	4/02/84 (8.80)	4/02/84 (7.40)	4/02/84 (18.2)	4/02/84 (11.8)	4/05/84 (15.6)	4/05/84 (12.7)	4/05/84 (15.1)	4/02/84 (16.0)	4/02/84 (15.2)
					RTI ANALYSIS				
1st Analysis Date ppb	5/24/84 (13.4 ± 0.9)+	5/24/84 (10.6 ± 0.6)+	5/14/84 (15.1 ± 0.7)	5/20/84 (14.6 ± 0.7)	5/14/84** (13.5 ± 0.5)+	5/14/84 (15.5 ± 0.6)	5/14/84** (13.8 ± 0.6)+	5/20/84** (16.2 ± 0.7)+	5/20/84 (16.8 ± 0.8)+
2nd Analysis Day*** ppb	87 (13.8 ± 1.0)+	87 (8.50 ± 0.5)	98 (15.1 ± 0.7)	93 (14.7 ± 0.7)	98 (15.5 ± 0.5)	98 (15.4 ± 0.6)	98 (16.7 ± 0.7)	98 (16.8 ± 0.7)	98 (14.8 ± 0.7)
3rd Analysis Day*** ppb	309 (10.3 ± 0.7)	309 (8.00 ± 0.4)	on audit	310 (14.2 ± 0.7)	on audit	on audit	on audit	on audit	310 (14.1 ± 0.7)
4th Analysis Day*** ppb	454 (10.8 ± 0.8)	454 (9.30 ± 0.6)	449 (15.3 ± 0.7)	443 (15.4 ± 0.8)	449 (16.3 ± 0.6)	449 (14.6 ± 0.6)	449 (16.3 ± 0.7)	449 (14.1 ± 0.6)	443 (13.9 ± 0.7)
5th Analysis Day*** ppb	749 (13.1 ± 0.9)	749 (12.7 ± 0.7)	773 (15.1 ± 0.7)	767 (14.2 ± 0.7)	773 (16.3 ± 0.5)	773 (17.4 ± 0.7)	773 (16.4 ± 0.6)	773 (15.0 ± 0.6)	767 (15.7 ± 0.8)
6th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
7th Analysis Day*** ppb	1604 NA	1604 NA	1618 (15.0 ± 1.0)	1608 (14.2 ± 1.0)	1618**** (15.4 ± 1.2)	1618 (14.0 ± 0.8)	1618 NA	1608 (13.5 ± 1.7)	1608 (14.3 ± 0.7)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A5 (continued)

		COMPOUND								
Activity		**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
						RTI QUALITY CONTROL*****				
3rd Analysis Day		309	309	297	310	297	297	297	297	310
	ppb	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day		454	454	449	443	449	449	449	449	443
	ppb	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.10 ± 0.4)	(11.0 ± 0.4)	19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day		749	749	773	767	773	773	773	773	767
	ppb	(13.0 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis Day		901	901	901	901	901	901	901	901	901
	ppb	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day		1604	1604	1618	1608	1618****	1618	1618	1608	1608
	ppb	(3.61 ± 2.7)	(5.93 ± 3.3)	(11.7 ± 1.1)	(11.1 ± 1.0)	(11.2 ± 0.7)	(11.4 ± 0.7)	NA	(11.3 ± 0.9)	(11.6 ± 0.6)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.9 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****ECD analysis data.
*****NBS primary standard was analyzed as internal quality control on each day of RTI analysis. No quality control with NBS primary standards was performed during RTI 1st and 2nd analysis.

+ = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A6

Activity	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	MANUFACTURER ANALYSIS								
THEORETICAL									
ppb	(15.9)	(16.3)	(16.2)	(16.0)	(15.0)	(15.0)	(15.0)	(16.2)	(15.8)
1st Analysis Date	3/14/84	3/14/84	3/14/84	3/14/84	3/20/84	5/14/84	3/20/84	3/14/84	3/14/84
ppb	(8.60)	(7.00)	(15.8)	(11.4)	(10.8)	(13.3)	(15.5)	(17.5)	(11.1)
2nd Analysis Date	3/30/84	3/30/84	3/30/84	3/30/84	4/06/84	8/19/84	4/06/84	3/30/84	3/30/84
ppb	(8.00)	(7.10)	(18.3)	(12.7)	(13.9)	(12.2)	(14.2)	(18.2)	(14.4)
	RTI ANALYSIS**								
1st Analysis Date	5/24/84	5/24/84	5/14/84	5/20/84	5/14/84***	5/14/84	5/14/84***	5/14/84***	5/20/84
ppb	(12.0 ± 0.8)	(7.50 ± 0.4)	(15.6 ± 0.7)	(14.2 ± 0.7)	(13.4 ± 0.5)	(15.2 ± 0.6)	(13.6 ± 0.6)	(16.6 ± 0.7)	(17.4 ± 0.9)†
2nd Analysis Day****	87	87	98	93	98	98	98	98	93
ppb	(11.6 ± 0.8)	(6.70 ± 0.4)	(15.4 ± 0.7)	(15.7 ± 0.8)	(15.4 ± 0.5)	(14.9 ± 0.6)	(16.6 ± 0.7)	(16.0 ± 0.7)	(15.3 ± 0.8)
3rd Analysis Day****	309	309		310					310
ppb	(12.6 ± 0.9)	(7.30 ± 0.4)	on audit	(14.2 ± 0.7)	on audit	on audit	on audit	on audit	(14.3 ± 0.7)
4th Analysis Day****	454	454	449	443	449	449	449	449	443
ppb	(12.2 ± 0.8)	(7.50 ± 0.4)	(15.1 ± 0.7)	(15.8 ± 0.8)	(16.2 ± 0.5)	(14.0 ± 0.5)	(16.0 ± 0.7)	(11.8 ± 0.5)	(14.0 ± 0.7)
5th Analysis Day****	749	749	772	766	772	772	772	772	766
ppb	(13.1 ± 0.9)	(10.9 ± 0.6)	(14.4 ± 0.7)	(12.5 ± 0.6)	(15.6 ± 0.5)	(10.4 ± 0.4)	(16.4 ± 0.6)	(12.1 ± 0.5)	(14.8 ± 0.8)
6th Analysis Day****	901	901	901	901	901	901	901	901	901
ppb	(12.8 ± 1.7)	(7.50 ± 0.4)	(15.6 ± 0.5)	(14.8 ± 0.5)	(16.9 ± 1.4)	(13.0 ± 0.6)	NA	(13.6 ± 0.5)	(14.4 ± 0.4)
7th Analysis Day****	1604	1604	1618	1608	1618	1618	1618	1608	1608
ppb	NA	NA	(15.4 ± 0.9)	(11.4 ± 1.1)	(15.5 ± 1.1)‡	(12.7 ± 0.7)	NA	(10.9 ± 1.4)	(14.4 ± 0.8)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A6 (continued)

		COMPOUND								
Activity		**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
						RTI QUALITY CONTROL*****				
3rd Analysis Day		309	309	297	310	297	297	297	297	310
	ppb	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.2 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day		454	454	449	443	449	449	449	449	443
	ppb	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day		749	749	772	766	772	772	772	772	766
	ppb	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis Day		901	901	901	901	901	901	901	901	901
	ppb	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 0.9)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
7th Analysis Day		1604	1604	1618	1608	1618	1618	1618	1608	1608
	ppb	(3.61 ± 2.7)	(5.93 ± 3.3)	(11.7 ± 1.1)	(11.1 ± 1.0)	(11.2 ± 0.7)+ǂ	(11.4 ± 0.7)	NA	(11.3 ± 0.9)	(11.6 ± 0.6)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.

**Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Calibration was performed using stainless steel sphere dilution method.

****Number of days after 1st RTI analysis date.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis. No quality control with NBS primary standards was performed during RTI 1st and 2nd analysis.

+ = Questionable value.
NA = Not analyzed.
ǂ = ECD analysis data.

Stability Study for Group II Compounds*
Cylinder II-A7

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(12.0)	(10.1)	(10.4)	(9.90)	(10.0)	(10.0)
1st Analysis Date ppb	11/13/84 (11.7)	11/13/84 (9.30)	11/13/84 (9.10)	11/13/84 (8.60)	12/12/84 (9.90)	12/12/84 (9.50)	12/12/84 (8.70)	11/13/84 (10.4)	11/13/84 (10.0)
2nd Analysis Date ppb	1/02/85 (8.70)	1/02/85 (9.10)	1/02/85 (9.30)	1/02/85 (8.30)	1/18/85 (8.30)	1/18/85 (8.10)	1/18/85 (9.50)	1/02/85 (10.7)	1/02/85 (10.4)
RTI ANALYSIS									
1st Analysis Date ppb	3/29/85 (7.90 ± 0.6)	3/29/85 (9.60 ± 0.5)	3/07/85 (9.00 ± 0.4)	3/15/85 (9.80 ± 0.5)	3/07/85 (9.40 ± 0.3)	3/07/85 (10.8 ± 0.4)	3/07/85 (9.90 ± 0.4)	3/07/85 (10.2 ± 0.4)	3/15/85 (10.1 ± 0.5)
2nd Analysis Day** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
3rd Analysis Day** ppb	439 (9.30 ± 0.7)	439 (12.7 ± 0.7)	474 (8.60 ± 0.4)	466 (10.5 ± 0.5)	474 (9.40 ± 0.3)	474 (10.1 ± 0.4)	474 (10.6 ± 0.4)	474 (9.30 ± 0.4)	466 (8.50 ± 0.4)
4th Analysis Day** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
5th Analysis Day** ppb	1294 NA	1294 NA	1316 (10.1 ± 0.6)	1322 (9.97 ± 0.7)	1316*** (9.88 ± 0.7)	1316 (11.7 ± 0.7)	1316 NA	1316 (11.5 ± 1.6)	1322 (9.53 ± 0.6)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A7 (continued)

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluoromethane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						RTI QUALITY CONTROL****				
1st Analysis Date		3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
	ppb	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(9.30 ± 0.5)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.9 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date		147	147	152	144	152	152	152	152	144
	ppb	(12.0 ± 0.8)	(14.1 ± 0.8)	(11.6 ± 0.6)	(9.10 ± 0.4)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Date		439	439	474	466	474	474	474	474	466
	ppb	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day		749	749	772	766	722	722	722	722	722
	ppb	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.5)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day		1294	1294	1316	1322	1316***	1316	1316	1316	1322
	ppb	(2.95 ± 2.3)	(5.88 ± 3.4)	(11.2 ± 0.7)	(10.7 ± 0.7)	(11.5 ± 0.9)	(11.2 ± 0.9)	NA	(11.0 ± 1.0)	(11.5 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified.
**Number of days after 1st RTI analysis date
***ECD analysis data.
****NBS primary standard was analyzed as internal quality control on each day of RTI analysis unless otherwise indicated.
+ = Questionable value.
NA = Not analyzed

Stability Study for Group II Compounds*
Cylinder II-A8

	COMPOUND								
Activity	**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
	MANUFACTURER ANALYSIS								
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.1)	(10.0)	(9.90)	(10.0)	(10.0)
1st Analysis Date ppb	11/06/84 (8.40)	11/06/84 (9.40)	11/06/84 (9.30)	11/06/84 (8.70)	12/11/84 (9.80)	12/11/84 (8.70)	12/11/84 (9.20)	11/06/84 (10.5)	11/06/84 (10.3)
2nd Analysis Date ppb	12/28/84 (11.0)	12/28/84 (9.20)	12/28/84 (9.40)	12/28/84 (8.70)	1/15/85 (11.9)	1/15/85 (9.20)	12/28/84 (9.60)	12/28/84 (11.2)	1/02/85 (10.6)
	RTI ANALYSIS**								
1st Analysis Date ppb	3/29/85 (10.7 ± 0.7)	3/29/85 (9.60 ± 0.5)	3/07/85 (9.20 ± 0.4)	3/15/85 (10.3 ± 0.5)	3/07/85 (9.60 ± 0.3)	3/07/85 (10.6 ± 0.4)	3/07/85 (9.90 ± 0.4)	3/07/85 (10.2 ± 0.4)	3/15/85 (10.1 ± 0.5)
2nd Analysis Day*** ppb	147 (10.1 ± 0.7)	147 (9.00 ± 0.5)	152 (9.50 ± 0.5)	144 (8.50 ± 0.4)	152 (9.70 ± 0.3)	152 (11.4 ± 0.4)	152 (10.5 ± 0.4)	152 (8.50 ± 0.3)	144 (9.40 ± 0.5)
3rd Analysis Day*** ppb	442 (10.2 ± 0.7)	442 (9.70 ± 0.5)	474 (8.90 ± 0.4)	466 (12.6 ± 0.7)	474 (10.3 ± 0.3)	474 (11.0 ± 0.4)	474 (11.8 ± 0.5)	474 (10.1 ± 0.4)	466 (10.5 ± 0.6)
4th Analysis Day*** ppb	852 NA	852 (8.80 ± 0.4)	852 (10.5 ± 0.3)	852 (10.4 ± 0.3)	852 (10.0 ± 0.9)	852 (11.4 ± 0.5)	852 NA	852 NA	852 (10.0 ± 0.3)
5th Analysis Day*** ppb	1294 NA	1294 NA	1322 (10.4 ± 0.6)	1316 (10.1 ± 0.7)	1322**** (10.1 ± 0.7)	1322 (11.4 ± 0.6)	1322 NA	1322 (11.3 ± 0.9)	1316 (9.67 ± 0.6)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A8 (continued)

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
		COMPOUND								
		RTI QUALITY CONTROL*****								
1st Analysis Date	ppb	3/29/85 (14.1 ± 1.0)	3/29/85 (16.9 ± 0.9)	3/07/85 (10.9 ± 0.5)	3/15/85 (9.30 ± 0.5)	3/07/85 (10.7 ± 0.4)	3/07/85 (19.4 ± 0.8)	3/07/85 (8.20 ± 0.3)	3/07/85 (9.50 ± 0.4)	3/15/85 (11.9 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date	ppb	147 (12.0 ± 0.8)	147 (14.1 ± 0.8)	152 (11.6 ± 0.6)	144 (9.10 ± 0.5)	152 (11.0 ± 0.4)	152 (19.3 ± 0.8)	152 (8.40 ± 0.3)	152 (8.80 ± 0.4)	144 (11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	ppb	442 (13.6 ± 0.9)	442 (16.0 ± 0.8)	474 (10.9 ± 0.5)	466 (9.50 ± 0.5)	474 (10.6 ± 0.3)	474 (19.9 ± 0.8)	474 (10.8 ± 0.4)	474 (9.70 ± 0.4)	466 (11.8 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	ppb	852 (13.2 ± 1.8)	852 (17.2 ± 0.8)	852 (11.7 ± 0.4)	852 (9.40 ± 0.3)	852 (11.4 ± 1.0)	852 (18.6 ± 0.8)	852 NA	852 (10.6 ± 0.4)	852 (12.0 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day	ppb	1294 (2.95 ± 2.3)	1294 (5.88 ± 3.4)	1322 (11.2 ± 0.7)	1316 (10.7 ± 0.7)	1322**** (11.5 ± 0.9)	1322 (11.3 ± 0.9)	1322 NA	1322 (11.0 ± 1.0)	1316 (11.5 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A9

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	COMPOUND								
	MANUFACTURER ANALYSIS								
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.1)	(10.2)	(9.90)	(10.0)	(10.0)
1st Analysis Date	11/07/84	11/07/84	11/07/84	11/07/84	12/01/84	12/01/84	12/01/84	11/07/84	11/07/84
ppb	(8.40)	(9.20)	(9.10)	(8.10)	(11.8)	(8.90)	(9.40)	(10.4)	(10.2)
2nd Analysis Date	12/31/84	12/31/84	12/31/84	12/31/84	1/15/85	1/15/85	1/15/85	12/31/84	12/31/84
ppb	(8.80)	(9.00)	(9.10)	(8.50)	(11.9)	(8.40)	(12.1)	(10.6)	(10.4)
	RTI ANALYSIS**								
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
ppb	(10.7 ± 0.7)	(9.60 ± 0.5)	(9.00 ± 0.4)	(10.0 ± 0.5)	(9.50 ± 0.3)	(10.7 ± 0.4)	(9.50 ± 0.4)	(10.3 ± 0.4)	(10.0 ± 0.5)
2nd Analysis Day***	147	147	152	144	152	152	152	152	144
ppb	(10.1 ± 0.7)	(8.90 ± 0.5)	(9.40 ± 0.5)	(7.70 ± 0.4)	(9.60 ± 0.3)	(11.2 ± 0.4)	(10.4 ± 0.4)	(7.80 ± 0.3)	(9.30 ± 0.5)
3rd Analysis Day***	443	443	474	466	474	474	474	474	466
ppb	(10.2 ± 0.7)	(11.3 ± 0.6)	(9.30 ± 0.5)	(9.20 ± 0.5)	(9.70 ± 0.3)	(9.30 ± 0.4)	(12.2 ± 0.5)	(10.7 ± 0.4)	(9.80 ± 0.5)
4th Analysis Day***	852	852	852	852	852	852	852	852	852
ppb	NA	(8.20 ± 0.4)	(9.20 ± 0.3)	(8.98 ± 0.3)	(9.60 ± 0.8)	(8.90 ± 0.4)	NA	(10.8 ± 0.4)	NA
5th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit

(continued)

Stability Study for Group II Compounds*
Cylinder II-A9 (continued)

Activity		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
1st Analysis Date		3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
	ppb	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(9.30 ± 0.5)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.9 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date		147	147	152	144	152	152	152	152	144
	ppb	(12.0 ± 0.8)	(14.1 ± 0.8)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day		443	443	474	466	474	474	474	474	466
	ppb	(13.6 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day		852	852	852	852	852	852	852	852	852
	ppb	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.36 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.4)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day		1294	1294	1316	1322	1316*****	1316	1316	1316	1322
	ppb	(2.95 ± 2.3)	(5.88 ± 3.4)	(11.2 ± 0.7)	(10.7 ± 0.7)	(11.5 ± 0.9)	(11.3 ± 0.9)	NA	(11.0 ± 1.0)	(11.5 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
*****ECD analysis data.
NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A10

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(30.1)	(30.0)	(30.0)	(30.0)	(30.9)	(30.0)	(29.2)	(30.0)	(30.0)
1st Analysis Date	11/14/84	11/14/84	11/14/84	11/14/84	12/26/84	12/26/84	12/26/84	11/14/84	11/14/84
ppb	(27.7)	(27.8)	(27.7)	(24.9)	(25.4)	(29.3)	(26.2)	(32.4)	(30.1)
2nd Analysis Date	1/04/85	1/04/85	1/04/85	1/04/85	1/22/85	1/22/85	1/22/85	1/04/85	1/04/85
ppb	(34.3)	(29.0)	(26.8)	(26.8)	(27.7)	(30.1)	(27.9)	(33.3)	(31.7)
RTI ANALYSIS**									
1st Analysis Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
ppb	(26.8 ± 1.9)	(28.0 ± 1.5)	(28.8 ± 1.4)	(30.2 ± 1.5)	(29.7 ± 1.0)	(32.1 ± 1.3)	(31.4 ± 1.3)	(30.8 ± 1.3)	(30.6 ± 1.5)
2nd Analysis Day***	147	147	155	147	155	155	155	155	147
ppb	(24.2 ± 1.7)	(29.0 ± 1.6)	(28.2 ± 1.4)	(27.3 ± 1.4)	(29.5 ± 1.0)	(31.4 ± 1.2)	(29.4 ± 1.2)	(32.6 ± 1.3)	(27.7 ± 1.4)
3rd Analysis Day***	445	445	472	464	472	472	472	472	464
ppb	(27.1 ± 1.9)	(27.4 ± 1.4)	(29.6 ± 1.5)	(28.6 ± 1.5)	(32.1 ± 1.0)	(30.5 ± 1.2)	(26.1 ± 1.0)	(30.4 ± 1.3)	(30.1 ± 1.6)
4th Analysis Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
ppb									
5th Analysis Day***	1296	1296	1318	1324	1318****	1318	1318	1318	1318
ppb	NA	NA	(30.4 ± 2.5)	(30.0 ± 2.5)	(30.8 ± 2.0)	(34.1 ± 2.0)	NA	(31.7 ± 4.4)	(29.3 ± 1.5)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A10 (continued)

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	COMPOUND								
	RTI QUALITY CONTROL*****								
1st Analysis Date ppb	3/27/85 (13.2 ± 0.9)	3/27/85 (16.8 ± 0.9)	3/05/85 (11.4 ± 0.5)	3/13/85 (9.50 ± 0.5)	3/05/85 (11.1 ± 0.4)	3/05/85 (21.0 ± 0.8)	3/05/85 (9.10 ± 0.4)	3/05/85 (10.0 ± 0.4)	3/13/85 (12.5 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date ppb	147 (12.5 ± 0.9)	147 (16.9 ± 0.9)	155 (11.3 ± 0.5)	147 (8.60 ± 0.4)	155 (11.2 ± 0.4)	155 (18.9 ± 0.7)	155 (8.30 ± 0.3)	155 (9.10 ± 0.4)	147 (11.3 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day ppb	445 (13.6 ± 0.9)	445 (16.1 ± 0.8)	472 (11.5 ± 0.6)	464 (9.80 ± 0.5)	472 (10.7 ± 0.3)	472 (20.4 ± 0.8)	472 (10.6 ± 0.4)	472 (10.2 ± 0.4)	464 (11.7 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day ppb	852 (13.2 ± 1.8)	852 (17.2 ± 0.8)	852 (11.8 ± 0.4)	852 (9.36 ± 0.3)	852 (11.4 ± 1.0)	852 (18.4 ± 0.4)	852 NA	852 (10.6 ± 0.4)	852 (12.0 ± 0.4)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day ppb	1296 (2.95 ± 2.3)	1296 (5.88 ± 3.4)	1318 (11.2 ± 0.7)	1324 (10.7 ± 0.7)	1328**** (11.5 ± 0.9)	1318 (11.3 ± 0.9)	1318 NA	1318 (11.0 ± 1.0)	1324 (11.5 ± 0.7)
NBS Concen. ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A11

Activity	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	MANUFACTURER ANALYSIS								
THEORETICAL									
ppb	(30.1)	(30.0)	(30.0)	(30.0)	(30.3)	(30.0)	(29.7)	(30.0)	(30.0)
1st Analysis Date	11/28/84	11/28/84	11/28/84	11/28/84	12/21/84	12/21/84	12/21/84	11/28/84	11/28/84
ppb	(30.9)	(24.9)	(27.8)	(24.4)	(31.6)	(29.0)	(24.9)	(32.2)	(30.0)
2nd Analysis Date	1/04/85	1/04/85	1/04/85	1/04/85	1/22/85	1/22/85	1/22/85	1/04/85	1/04/85
ppb	(27.1)	(29.3)	(27.1)	(25.3)	(28.0)	(29.7)	(29.3)	(32.4)	(30.8)
	RTI ANALYSIS**								
1st Analysis Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
ppb	(26.1 ± 1.8)	(26.7 ± 1.5)	(28.9 ± 1.4)	(30.2 ± 1.5)	(30.5 ± 1.0)	(32.4 ± 1.3)	(32.2 ± 1.3)	(31.1 ± 1.3)	(30.6 ± 1.5)
2nd Analysis Day***	147	147	155	147	155	155	155	155	147
ppb	(24.1 ± 1.7)	(28.0 ± 1.5)	(27.6 ± 1.3)	(26.3 ± 1.3)	(29.7 ± 1.0)	(31.3 ± 1.2)	(29.7 ± 1.2)	(33.7 ± 1.4)	(27.5 ± 1.4)
3rd Analysis Day***	444	444	476	470	476	476	476	476	470
ppb	(27.1 ± 1.9)	(25.8 ± 1.4)	(29.5 ± 1.5)	(27.8 ± 1.4)	(32.9 ± 1.0)	(30.7 ± 1.2)	(26.2 ± 1.0)	(30.4 ± 1.3)	(29.8 ± 1.6)
4th Analysis Day***	852	852	852	852	852	852	852	852	852
ppb	(26.9 ± 3.6)	(25.9 ± 1.2)	(28.2 ± 0.9)	(28.3 ± 0.9)	(32.0 ± 2.7)	(30.1 ± 1.3)	NA	(30.9 ± 1.2)	(28.9 ± 0.9)
5th Analysis Day***	1296	1296	1324	1318	1324****	1324	1324	1324	1318
ppb	NA	NA	(30.2 ± 1.9)	(29.8 ± 2.0)	(29.8 ± 2.0)	(34.1 ± 2.0)	NA	(31.3 ± 3.2)	(29.1 ± 1.6)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A11 (continued)

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					COMPOUND				
					RTI QUALITY CONTROL*****				
1st Analysis Date ppb	3/27/85 (13.2 ± 0.9)	3/27/85 (16.8 ± 0.9)	3/05/85 (11.4 ± 0.5)	3/13/85 (9.50 ± 0.5)	3/05/85 (11.1 ± 0.4)	3/05/85 (21.0 ± 0.8)	3/05/85 (9.10 ± 0.4)	3/05/85 (10.0 ± 0.4)	3/13/85 (12.5 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date ppb	147 (12.5 ± 0.9)	147 (16.9 ± 0.9)	155 (11.3 ± 0.5)	147 (8.60 ± 0.4)	155 (11.2 ± 0.4)	155 (18.9 ± 0.7)	155 (8.30 ± 0.3)	155 (9.10 ± 0.4)	147 (11.3 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day ppb	444 (13.6 ± 0.9)	444 (16.0 ± 0.8)	476 (11.5 ± 0.6)	470 (9.80 ± 0.5)	476 (10.7 ± 0.3)	476 (20.4 ± 0.8)	476 (10.6 ± 0.4)	476 (10.2 ± 0.4)	470 (11.7 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day ppb	852 (13.2 ± 1.8)	852 (17.2 ± 0.8)	852 (11.8 ± 0.4)	852 (9.36 ± 0.3)	852 (11.4 ± 1.0)	852 (18.4 ± 0.8)	852 NA	852 (10.6 ± 0.4)	852 (12.0 ± 0.4)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day ppb	1296 (3.61 ± 2.7)	1296 (5.93 ± 3.2)	1324 (11.7 ± 1.1)	1318 (11.1 ± 1.0)	1324**** (11.2 ± 0.7)	1324 (11.4 ± 0.7)	1324 (NA)	1324 (11.3 ± 0.9)	1318 (11.6 ± 0.6)
NBS Concen. ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A12

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					COMPOUND				
					MANUFACTURER ANALYSIS				
THEORETICAL									
ppb	(10.0)	(29.9)	(10.0)	(9.90)	(9.9)	(29.6)	(29.8)	(29.9)	(29.9)
1st Analysis Date	12/03/84	12/03/84	12/03/84	12/03/84	12/12/84	12/12/84	12/12/84	12/03/84	12/03/84
ppb	(7.60)	(27.1)	(9.40)	(9.40)	(7.80)	(27.4)	(36.2)	(32.1)	(32.7)
2nd Analysis Date	1/08/85	1/08/85	1/08/85	1/08/85	1/21/85	1/21/85	1/21/85	1/08/85	1/08/85
ppb	(8.70)	(28.1)	(9.70)	(8.90)	(9.70)	(27.4)	(33.2)	(34.1)	(32.5)
					RTI ANALYSIS**				
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
ppb	(10.4 ± 0.7)	(26.4 ± 1.5)	(9.60 ± 0.5)	(10.3 ± 0.5)	(9.70 ± 0.3)	(31.0 ± 1.2)	(31.0 ± 1.3)	(30.4 ± 1.2)	(30.2 ± 1.5)
2nd Analysis Day***	146	146	153	146	153	153	153	153	146
ppb	(10.4 ± 0.7)	(27.2 ± 1.5)	(9.60 ± 0.5)	10.3 ± 0.5)	(9.20 ± 0.3)	(31.5 ± 1.2)	(30.5 ± 1.3)	(31.3 ± 1.3)	(29.3 ± 1.5)
3rd Analysis Day***	442	442	474	469	474	474	474	474	469
ppb	(10.2 ± 0.7)	(29.0 ± 1.5)	(10.1 ± 0.5)	(10.5 ± 0.5)	(9.80 ± 0.3)	(39.1 ± 1.6)	(27.7 ± 1.1)	(31.8 ± 1.3)	(33.9 ± 1.8)
4th Analysis Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
ppb									
5th Analysis Day***	1294	1294	1322	1316	1322*****	1322	1322	1322	1316
ppb	NA	NA	(11.4 ± 0.7)	(10.8 ± 0.9)	(10.1 ± 0.6)	(34.0 ± 1.8)	NA	(33.2 ± 3.0)	(30.7 ± 1.6)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A12 (continued)

		COMPOUND								
Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
						RTI QUALITY CONTROL****				
1st Analysis Date	ppb	3/29/85 (14.1 ± 1.0)	3/29/85 (16.1 ± 0.9)	3/07/85 (10.9 ± 0.5)	3/14/85 (8.80 ± 0.4)	3/07/85 (10.7 ± 0.4)	3/07/85 (19.4 ± 0.8)	3/07/85 (8.20 ± 0.3)	3/07/85 (9.50 ± 0.4)	3/14/85 (11.4 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date	ppb	146 (13.3 ± 0.9)	146 (17.0 ± 0.9)	153 (11.3 ± 0.5)	146 (8.60 ± 0.4)	153 (11.2 ± 0.4)	153 (18.9 ± 0.7)	153 (8.30 ± 0.3)	153 (9.10 ± 0.4)	146 (11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	ppb	442 (13.6 ± 0.9)	442 (16.0 ± 0.8)	474 (11.5 ± 0.6)	469 (9.80 ± 0.5)	474 (10.7 ± 0.3)	474 (20.4 ± 0.8)	474 (10.6 ± 0.4)	474 (10.2 ± 0.4)	469 (11.7 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	ppb	852 (13.2 ± 1.8)	852 (17.2 ± 0.8)	852 (11.8 ± 0.4)	852 (9.36 ± 0.3)	852 (11.4 ± 1.0)	852 (18.4 ± 0.8)	852 NA	852 (10.6 ± 0.4)	852 (12.0 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day	ppb	1294 NA	1294 (5.88 ± 3.4)	1322 (11.2 ± 0.7)	1316 (10.7 ± 0.7)	1322***** (11.5 ± 0.9)	1322 (11.3 ± 0.9)	1322 NA	1322 (11.0 ± 1.0)	1316 (11.5 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

*****ECD analysis data.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A13

Activity		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
THEORETICAL	ppb	(10.0)	(30.3)	(10.0)	(10.0)	(10.0)	(30.2)	(30.0)	(30.0)	(30.0)
1st Analysis Date		12/04/84	12/04/84	12/04/84	12/04/84	12/21/84	12/21/84	12/21/84	12/04/84	12/04/84
	ppb	(10.2)	(30.2)	(10.0)	(9.10)	(10.7)	(29.8)	(31.5)	(35.0)	(32.8)
2nd Analysis Date		1/09/85	1/09/85	1/09/85	1/09/85	1/21/85	1/21/85	1/21/85	1/09/85	1/09/85
	ppb	(9.60)	(30.0)	(9.20)	(9.10)	(10.1)	(28.9)	(31.9)	(35.1)	(32.2)
RTI ANALYSIS**										
1st Analysis Date		3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
	ppb	(10.6 ± 0.7)	(28.7 ± 1.6)	(9.90 ± 0.5)	(10.3 ± 0.5)	(10.1 ± 0.3)	(33.3 ± 1.3)	(32.2 ± 1.3)	(32.1 ± 1.3)	(30.4 ± 1.5)
2nd Analysis Day***		146	146	153	146	153	153	153	153	146
	ppb	(10.4 ± 0.7)	(26.9 ± 1.5)	(9.80 ± 0.5)	(9.80 ± 0.5)	(10.6 ± 0.4)	(32.8 ± 1.3)	(31.4 ± 1.3)	(32.9 ± 1.3)	(29.3 ± 1.5)
3rd Analysis Day***		443	443	474	469	474	474	474	474	469
	ppb	(11.3 ± 0.8)	(30.0 ± 1.6)	(10.2 ± 0.5)	(9.70 ± 0.5)	(10.1 ± 0.3)	(30.0 ± 1.2)	(26.3 ± 1.0)	(32.0 ± 1.3)	(31.7 ± 1.7)
4th Analysis Day***		851	851	851	851	851	851	851	851	851
	ppb	NA	(29.7 ± 1.4)	NA	NA	(10.8 ± 0.9)	(34.3 ± 1.5)	NA	(32.5 ± 1.3)	NA
5th Analysis Day***		1294	1294	1322	1316	1322****	1322	1322	1322	1316
	ppb	NA	NA	(11.5 ± 0.8)	(10.9 ± 0.7)	(10.5 ± 0.8)	(36.1 ± 2.4)	NA	(34.6 ± 3.1)	(31.0 ± 2.0)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A13 (continued)

		COMPOUND								
Activity		**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
						RTI QUALITY CONTROL***				
1st Analysis Date	ppb	3/29/85 (14.1 ± 1.0)	3/29/85 (16.1 ± 0.9)	3/07/85 (10.9 ± 0.5)	3/14/85 (8.80 ± 0.6)	3/07/85 (10.7 ± 0.6)	3/07/85 (19.4 ± 0.8)	3/07/85 (8.20 ± 0.8)	3/07/85 (9.50 ± 0.4)	3/14/85 (11.4 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date	ppb	146 (13.3 ± 0.9)	146 (17.0 ± 0.9)	153 (11.3 ± 0.5)	146 (8.60 ± 0.4)	153 (11.2 ± 0.4)	153 (18.9 ± 0.7)	153 (8.30 ± 0.3)	153 (9.10 ± 0.4)	146 (11.3 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	ppb	443 (13.6 ± 0.9)	443 (16.1 ± 0.8)	474 (11.5 ± 0.6)	469 (9.80 ± 0.5)	474 (10.7 ± 0.3)	474 (20.4 ± 0.8)	474 (10.6 ± 0.4)	474 (10.2 ± 0.4)	469 (11.7 ± 0.6)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	ppb	851 (13.1 ± 1.8)	851 (17.2 ± 0.8)	851 (11.8 ± 0.4)	851 (9.70 ± 0.3)	851 (11.8 ± 1.0)	851 (20.4 ± 0.9)	851 NA	851 (10.2 ± 0.4)	851 (12.0 ± 0.4)
NBS Concen.	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day	ppb	1294 NA	1294 (5.88 ± 3.4)	1322 (11.2 ± 0.7)	1316 (10.7 ± 0.7)	1322**** (11.5 ± 0.9)	1322 (11.3 ± 0.9)	1322 NA	1322 (11.0 ± 1.0)	1316 (11.5 ± 0.7)
NBS Concen.	ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A14

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(41.6)	(20.0)	(40.1)	(40.1)	(40.1)	(20.1)	(20.1)	(20.2)	(20.1)
1st Analysis Date ppb	12/05/84 (47.7)	12/05/84 (17.7)	12/05/84 (35.9)	12/05/84 (33.0)	12/26/84 (27.4)	12/26/84 (19.8)	12/'26/84 (19.3)	12/05/84 (21.3)	12/05/84 (19.9)
2nd Analysis Date ppb	1/11/85 (43.9)	1/11/85 (16.7)	1/11/85 (35.0)	1/11/85 (33.4)	1/23/85 (33.7)	1/23/85 (19.2)	1/23/85 (20.8)	1/11/85 (22.2)	1/11/85 (19.9)
					RTI ANALYSIS**				
1st Analysis Date ppb	3/27/85 (37.3 ± 2.6)	3/27/85 (16.4 ± 0.9)	3/05/85 (37.9 ± 1.8)	3/13/85 (41.0 ± 2.1)	3/05/85 (36.8 ± 1.3)	3/05/85 (21.9 ± 0.9)	3/05/85 (21.8 ± 0.9)	3/05/85 (21.9 ± 0.9)	3/13/85 (19.8 ± 1.0)
2nd Analysis Day*** ppb	148 (38.1 ± 2.7)	148 (16.4 ± 0.9)	156 (38.0 ± 1.8)	148 (38.8 ± 2.0)	156 (38.6 ± 1.3)	156 (21.8 ± 0.8)	156 (20.6 ± 0.8)	156 (24.7 ± 1.0)	148 (18.2 ± 0.9)
3rd Analysis Day*** ppb	445 (38.4 ± 2.7)	445 (16.1 ± 0.8)	476 (39.4 ± 1.9)	470 (37.4 ± 1.9)	476 (40.8 ± 1.3)	476 (23.1 ± 0.9)	476 (20.3 ± 0.8)	476 (20.8 ± 0.9)	470 (19.1 ± 1.0)
4th Analysis Day*** ppb	854 (38.2 ± 5.2)	854 (16.6 ± 0.8)	854 (39.2 ± 1.3)	854 (39.8 ± 1.2)	854 (33.5 ± 2.9)	854 (24.1 ± 1.0)	854 NA	854 NA	854 (19.8 ± 0.6)
5th Analysis Day*** ppb	1296 NA	1296 NA	1324 (39.4 ± 2.9)	1318 (40.1 ± 2.8)	1324**** (35.8 ± 2.4)	1324 (23.1 ± 1.3)	1324 NA	1324 (21.9 ± 2.1)	1318 (18.9 ± 1.0)

(continued)

Stability Study for Group II Compounds*
Cylinder II-A14 (continued)

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
					RTI QUALITY CONTROL*****				
1st Analysis Date ppb	3/27/85 (13.2 ± 0.9)	3/27/85 (16.8 ± 0.9)	3/07/85 (11.4 ± 0.5)	3/13/85 (9.50 ± 0.5)	3/05/85 (11.1 ± 0.4)	3/05/85 (21.0 ± 0.8)	3/05/85 (9.10 ± 0.4)	3/05/85 (10.0 ± 0.4)	3/13/85 (12.5 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date ppb	148 (13.3 ± 0.9)	148 (17.0 ± 0.9)	156 (11.2 ± 0.5)	148 (8.50 ± 0.4)	156 (11.2 ± 0.4)	156 (18.9 ± 0.7)	156 (8.50 ± 0.3)	156 (9.30 ± 0.4)	148 (11.3 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day ppb	445 (13.6 ± 0.9)	445 (16.1 ± 0.8)	476 (11.5 ± 0.6)	470 (9.80 ± 0.5)	476 (10.7 ± 0.3)	476 (20.4 ± 0.8)	476 (10.6 ± 0.4)	476 (10.2 ± 0.4)	470 (11.7 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day ppb	854 (11.6 ± 1.6)	854 (16.4 ± 0.8)	854 (10.5 ± 0.3)	854 (8.60 ± 0.3)	854 (8.90 ± 0.8)	854 NA	854 NA	854 (9.45 ± 0.4)	854 (10.2 ± 0.3)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day ppb	1296 NA	1296 (5.93 ± 3.3)	1324 (11.7 ± 1.1)	1318 (11.1 ± 1.0)	1324**** (11.2 ± 0.7)	1324 (11.4 ± 0.7)	1324 NA	1324 (11.3 ± 0.9)	1318 (11.6 ± 0.6)
NBS Concen. ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.

**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.

***Number of days after 1st RTI analysis date.

****ECD analysis data.

*****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A15

Activity		COMPOUND							
Activity	**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
				MANUFACTURER ANALYSIS					
THEORETICAL									
ppb	(41.5)	(20.0)	(40.0)	(40.0)	(40.0)	(20.1)	(20.0)	(20.1)	(20.0)
1st Analysis Date	12/07/84	12/07/84	12/07/84	12/07/84	12/27/84	12/27/84	12/27/84	12/07/84	12/07/84
ppb	(45.1)	(18.8)	(36.6)	(33.2)	(35.1)	(19.7)	(22.2)	(22.4)	(19.9)
2nd Analysis Date	1/14/85	1/14/85	1/14/85	1/14/85	1/23/85	1/23/85	1/23/85	1/14/85	1/14/85
ppb	(43.9)	(18.4)	(38.4)	(34.4)	(33.8)	(19.2)	(16.1)	(23.1)	(20.3)
				RTI ANALYSIS**					
1st Analysis Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
ppb	(36.3 ± 2.5)	(18.3 ± 1.0)	(38.4 ± 1.8)	(40.7 ± 2.1)	(36.6 ± 1.2)	(21.9 ± 0.9)	(21.9 ± 0.9)	(21.9 ± 0.9)	(20.1 ± 1.0)
2nd Analysis Day***	148	148	156	148	156	156	156	156	148
ppb	(37.6 ± 2.6)	(18.5 ± 1.0)	(38.4 ± 1.8)	(39.3 ± 2.0)	(38.5 ± 1.3)	(22.0 ± 0.9)	(20.8 ± 0.9)	(21.7 ± 0.9)	(18.2 ± 0.9)
3rd Analysis Day***	445	445	476	470	476	476	476	476	470
ppb	(37.3 ± 2.6)	(17.7 ± 0.9)	(41.9 ± 2.1)	(38.0 ± 2.0)	(42.0 ± 1.3)	(25.4 ± 1.0)	(21.0 ± 0.8)	(22.2 ± 0.9)	(21.2 ± 1.1)
4th Analysis Day***	851	851	851	851	851	851	851	851	851
ppb	(35.7 ± 4.8)	(18.0 ± 0.9)	(41.1 ± 1.3)	(40.7 ± 1.3)	(39.4 ± 3.4)	(24.5 ± 1.0)	NA	(22.7 ± 0.9)	(20.3 ± 0.6)
5th Analysis Day***									
ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit

(continued)

Stability Study for Group II Compounds*
Cylinder II-A15 (continued)

	COMPOUND								
Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
				RTI QUALITY CONTROL****					
1st Analysis Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
ppb	(13.2 ± 0.9)	(16.8 ± 0.9)	(11.4 ± 0.5)	(9.50 ± 0.5)	(11.1 ± 0.4)	(21.0 ± 0.8)	(9.10 ± 0.4)	(10.0 ± 0.4)	(12.5 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Date	148	148	156	148	156	156	156	156	148
ppb	(13.3 ± 0.9)	(17.0 ± 0.9)	(11.2 ± 0.5)	(8.50 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.50 ± 0.3)	(9.30 ± 0.4)	(11.3 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	445	445	476	470	476	476	476	476	470
ppb	(13.6 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	851	851	851	851	851	851	851	851	851
ppb	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.40 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.8)	NA	(10.2 ± 0.4)	(12.0 ± 0.4)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day	1296	1296	1324	1318	1324*****	1324	1324	1324	1318
ppb	(3.61 ± 2.7)	(5.93 ± 3.3)	(11.7 ± 1.1)	(11.1 ± 1.0)	(11.2 ± 0.7)	(11.4 ± 0.7)	NA	(11.3 ± 0.9)	(11.6 ± 0.5)
NBS Concen. ppb	(5.30 ± 3.0)	(7.30 ± 3.0)	(11.4 ± 0.6)	(11.0 ± 0.6)	(11.7 ± 0.6)	(11.2 ± 0.6)	(15.4 ± 0.8)	(11.1 ± 0.6)	(11.7 ± 0.6)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing, followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
*****ECD analysis data.

NA = Not analyzed.

Stability Study for Group II Compounds*
Cylinder II-A16

Activity		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
		COMPOUND								
MANUFACTURER ANALYSIS										
THEORETICAL	ppb	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis Date	ppb	5/09/86 (87.0)	5/09/86 (134)	5/09/86 (137)	5/09/86 (128)	5/09/86 (153)	5/09/86 (139)	5/09/86 (147)	5/09/86 (153)	5/09/86 (144)
RTI ANALYSIS**										
1st Analysis Date	ppb	6/17/86 (154 ± 11)	6/17/86 (167 ± 8.8)	7/01/86 (148 ± 7.2)	7/01/86 (155 ± 8.0)	7/01/86 (155 ± 4.8)	7/01/86 (184 ± 7.4)	7/01/86 (161 ± 6.2)	7/01/86 (158 ± 6.6)	7/01/86 (152 ± 8.0)
2nd Analysis Day***	ppb	408 (146 ± 20)	408 (144 ± 6.9)	408 (158 ± 4.7)	408 (150 ± 4.7)	408 (152 ± 13)	408 NA	408 NA	408 (159 ± 6.4)	408 (149 ± 4.5)
3rd Analysis Day***	ppb	849 (161 ± 63)	849 (156 ± 48)	835 (158 ± 10)	835 (149 ± 7.9)	835 (150 ± 5.9)	835 (188 ± 17)	835 NA	835 (157 ± 7.1)	835 (147 ± 6.1)
RTI QUALITY CONTROL****										
1st Analysis Date	ppb	6/17/86 (13.6 ± 0.9)	6/17/86 (16.1 ± 0.8)	7/01/86 (120 ± 6.0)	7/01/86 (126 ± 7.0)	7/01/86 (157 ± 5.0)	7/01/86 (181 ± 7.0)	7/01/86 (116 ± 5.0)	7/01/86 (159 ± 7.0)	7/01/86 (154 ± 8.0)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis Day	ppb	408 (12.8 ± 1.7)	408 (17.4 ± 0.8)	408 (11.6 ± 0.4)	408 (9.30 ± 0.3)	408 (12.5 ± 1.1)	408 (25.1 ± 1.1)	408 NA	408 (9.80 ± 0.4)	408 (11.9 ± 0.3)
NBS Concen	ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	ppb	849 (161 ± 37)	849 (129 ± 34)	835 (131 ± 7.6)	835 (148 ± 7.1)	835 (138 ± 5.7)	835 (116 ± 11)	835 NA	835 (163 ± 9.9)	835 (144 ± 6.1)
NBS Concen	ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 10)	(173 ± 5.0)	(160 ± 5.0)	(14.3 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis.

**First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID

***Number of days after 1st RTI analysis date

****NBS primary standard was analyzed as internal quality control on each day of RTI analysis

NA = Not analyzed

Stability Study for Group II Compounds*
Cylinder II-A17

Activity	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromo-methane	Dichloro-difluorometh-ane (F-12)	1,2-Dibromo-ethane	1,1,1-Trichloro-ethane
	COMPOUND								
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis Date ppb	5/09/86 (51.4)	5/09/86 (106)	5/09/86 (135)	5/09/86 (127)	5/09/86 (158)	5/09/86 (136)	5/09/86 (142)	5/09/86 (152)	5/09/86 (138)
RTI ANALYSIS**									
1st Analysis Date ppb	6/17/86 (47.1 ± 3.3)	6/17/86 (112 ± 5.9)	7/01/86 (148 ± 7.3)	7/01/86 (154 ± 8.0)	7/01/86 (156 ± 4.9)	7/01/86 (163 ± 6.5)	7/01/86 (160 ± 6.2)	7/01/86 (163 ± 6.7)	7/01/86 (152 ± 8.0)
2nd Analysis Day*** ppb	408 NA	408 NA	408 (153 ± 4.8)	408 (143 ± 4.5)	408 (156 ± 13)	408 NA	408 NA	408 (154 ± 6.1)	408 (140 ± 4.2)
3rd Analysis Day*** ppb	849 (53.7 ± 14)	849 NA	835 (156 ± 10)	835 (148 ± 6.9)	835 (150 ± 5.9)	835 (169 ± 15)	835 NA	835 (155 ± 11)	835 (146 ± 6.0)
RTI QUALITY CONTROL****									
1st Analysis Date ppb	6/17/86 (13.6 ± 0.9)	6/17/86 (16.1 ± 0.8)	7/01/86 (120 ± 6.0)	7/01/86 (126 ± 7.0)	7/01/86 (157 ± 5.0)	7/01/86 (181 ± 7.0)	7/01/86 (116 ± 5.0)	7/01/86 (159 ± 7.0)	7/01/86 (154 ± 8.0)
NBS Concen ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis Day ppb	408 (12.8 ± 1.7)	408 (17.4 ± 0.8)	408 (11.6 ± 0.4)	408 (9.30 ± 0.3)	408 (12.5 ± 1.1)	408 (25.1 ± 1.1)	408 NA	408 (9.80 ± 0.4)	408 (11.9 ± 0.3)
NBS Concen ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day ppb	849 (161 ± 37)	849 (129 ± 34)	835 (131 ± 7.6)	835 (148 ± 7.1)	835 (138 ± 5.7)	835 (116 ± 11)	835 (NA)	835 (163 ± 9.9)	835 (144 ± 6.1)
NBS Concen ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 10)	(173 ± 5.0)	(160 ± 5.0)	(143 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis

**First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID

***Number of days after 1st RTI analysis date

****NBS primary standard was analyzed as internal quality control on each day of RTI analysis

NA = Not analyzed

Stability Study for Group II Compounds*
Cylinder II-A18

	COMPOUND								
Activity	**Acetonitrile**	**Methyl Ethyl Ketone**	**Trichloro-ethylene**	**1,2-Dichloro-ethane**	**Trichloro-fluoro-methane (F-11)**	**Bromo-methane**	**Dichloro-difluorometh-ane (F-12)**	**1,2-Dibromo-ethane**	**1,1,1-Trichloro-ethane**
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis Date ppb	5/09/86 (82.4)	5/09/86 (132)	5/09/86 (137)	5/09/86 (128)	5/09/86 (145)	5/09/86 (138)	5/09/86 (146)	5/09/86 (154)	5/09/86 (146)
RTI ANALYSIS**									
1st Analysis Date ppb	6/17/86 (140 ± 9.7)	6/17/86 (159 ± 8.4)	7/01/86 (148 ± 7.3)	7/01/86 (154 ± 7.9)	7/01/86 (153 ± 4.8)	7/01/86 (186 ± 7.4)	7/01/86 (161 ± 6.2)	7/01/86 (163 ± 6.7)	7/01/86 (151 ± 8.0)
2nd Analysis Day*** ppb	408 (135 ± 18)	408 (147 ± 7.1)	408 NA	408 (145 ± 4.6)	408 NA	408 NA	408 NA	408 NA	408 (150 ± 4.5)
3rd Analysis Day*** ppb	849 (126 ± 37)	849 (141 ± 24)	835 (157 ± 8.6)	835 (150 ± 8.2)	835 (150 ± 7.0)	835 (188 ± 19)	835 NA	835 (158 ± 10)	835 (147 ± 6.4)
RTI QUALITY CONTROL****									
1st Analysis Date ppb	6/17/86 (13.6 ± 0.9)	6/17/86 (16.1 ± 0.8)	7/01/86 (120 ± 6.0)	7/01/86 (126 ± 7.0)	7/01/86 (157 ± 5.0)	7/01/86 (181 ± 7.0)	7/01/86 (116 ± 5.0)	7/01/86 (159 ± 7.0)	7/01/86 (154 ± 8.0)
NBS Concen ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis Day ppb	408 (12.8 ± 1.7)	408 (17.4 ± 0.8)	408 (11.6 ± 0.4)	408 (9.30 ± 0.3)	408 (12.5 ± 1.1)	408 (25.1 ± 1.1)	408 NA	408 (9.80 ± 0.4)	408 (11.2 ± 0.3)
NBS Concen. ppb	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day ppb	849 (161 ± 38)	849 (129 ± 34)	835 (131 ± 7.6)	835 (148 ± 7.1)	835 (138 ± 5.7)	835 (116 ± 11)	835 NA	835 (163 ± 9.9)	845 (144 ± 6.1)
NBS Concen. ppb	(141 ± 14)	(122 ± 12)	(129 ± 5.0)	(148 ± 5.0)	(139 ± 5.0)	(112 ± 10)	(173 ± 5.0)	(160 ± 5.0)	(143 ± 5.0)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis.

**First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis date.

****NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed

Stability Study For Group III Compounds*
Cylinder III-A1

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL							
ppb	(30.0)	(30.0)	(30.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis Date	4/24/85	4/24/85	4/24/85	4/24/85	4/24/85	4/24/85	4/24/85
ppb	(27.2)	(27.9)	(26.9)	(10.0)	(9.00)	(8.60)	(9.50)
2nd Analysis Date	6/1/85	6/1/85	6/1/85	6/1/85	6/1/85	6/1/85	6/1/85
ppb	(28.3)	(27.8)	(28.8)	(9.00)	(9.00)	(9.00)	(8.00)
				RTI ANALYSIS**			
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(24.0 ± 3.4)	(30.2 ± 3.0)	(29.5 ± 3.0)	(10.0 ± 3.0)	(8.00 ± 4.0)	(9.80 ± 1.1)	(10.8 ± 1.3)
2nd Analysis Day***	52	52	52	52	52	52	52
ppb	(21.9 ± 3.1)	(29.2 ± 2.9)	(31.2 ± 3.2)	(11.0 ± 3.0)	(9.00 ± 5.0)	(10.1 ± 1.1)	(10.6 ± 1.3)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(24.6 ± 4.6)	(30.2 ± 3.9)	(30.7 ± 4.2)	(8.60 ± 2.6)	(10.0 ± 3.2)	(12.3 ± 0.8)	(10.7 ± 1.8)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(21.8 ± 3.9)	(28.9 ± 3.8)	(33.3 ± 4.7)	(9.20 ± 2.4)	(11.4 ± 3.6)	(11.6 ± 0.7)	(11.7 ± 1.9)
5th Analysis Day***	922	922	922	922	922	922	922
ppb	NA	(29.7 ± 2.2)	(31.1 ± 2.3)	(8.64 ± 2.3)	(7.92 ± 2.9)	(10.6 ± 0.8)	(10.3 ± 1.2)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A1 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				RTI QUALITY CONTROL****			
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(13.0 ± 8.0)	(15.7 ± 1.6)	(7.90 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.9 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 1.1)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day	922	922	922	922	922	922	922
ppb	(10.5 ± 1.7)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.8)	(13.1 ± 2.2)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A2

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				MANUFACTURER ANALYSIS			
THEORETICAL ppb	(10.0)	(10.0)	(10.2)	(32.0)	(30.0)	(30.0)	(30.0)
1st Analysis Date ppb	4/22/85 (9.00)	4/22/85 (10.5)	4/22/85 (10.7)	4/22/85 (21.0)	4/22/85 (33.0)	4/22/85 (27.0)	4/22/85 (30.2)
2nd Analysis Date ppb	6/3/85 (8.40)	6/3/85 (8.90)	6/3/85 (10.7)	6/3/85 (19.0)	6/3/85 (29.0)	6/3/85 (27.4)	6/3/85 (30.6)
				RTI ANALYSIS**			
1st Analysis Date ppb	3/9/86 (8.40 ± 1.2)	3/9/86 (9.30 ± 1.0)	3/9/86 (9.50 ± 1.0)	3/9/86 (24.0 ± 6.0)	3/9/86 (29.0 ± 16)	3/9/86 (27.5 ± 3.2)	3/9/86 (30.4 ± 3.5)
2nd Analysis Day*** ppb	70 (7.80 ± 1.1)	70 (9.30 ± 0.9)	70 (9.70 ± 1.0)	70 (27.0 ± 8.0)	70 (28.0 ± 14)	70 (28.3 ± 3.2)	70 (29.1 ± 3.5)
3rd Analysis Day*** ppb	150 (7.60 ± 1.4)	150 (9.60 ± 1.2)	150 (10.6 ± 1.5)	150 (25.3 ± 7.9)	150 (32.2 ± 11)	150 (32.8 ± 2.3)	150 (28.3 ± 4.8)
4th Analysis Day*** ppb	385 (6.80 ± 1.2)	385 (10.5 ± 1.3)	385 (10.8 ± 1.5)	385 (24.8 ± 7.7)	385 (26.0 ± 8.0)	385 (28.0 ± 2.0)	385 (28.5 ± 4.6)
5th Analysis Day*** ppb	941 (8.51 ± 1.4)	941 (9.45 ± 1.0)	941 (9.85 ± 0.8)	941 (20.7 ± 5.4)	941 (21.5. ± 6.6)	941 (29.4 ± 2.3)	941 (29.2 ± 4.3)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A2 (continued)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				RTI QUALITY CONTROL******			
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day***	70	70	70	70	70	70	70
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day***	941	941	941	941	941	941	941
ppb	(10.5 ± 1.7)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.8)	(13.1 ± 2.2)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A3

Activity		Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
		COMPOUND						
MANUFACTURER ANALYSIS								
THEORETICAL	ppb	(29.9)	(10.0)	(30.8)	(10.0)	(30.0)	(10.2)	(30.0)
1st Analysis Date		7/24/85	7/24/85	7/24/85	7/24/85	7/24/85	7/24/85	7/24/85
	ppb	(28.3)	(8.50)	(29.4)	(8.00)	(28.0)	(8.80)	(31.0)
2nd Analysis Date		8/28/85	8/28/85	8/28/85	8/28/85	8/28/85	8/28/85	8/28/85
	ppb	(27.7)	(9.10)	(29.5)	(7.00)	(25.0)	(8.60)	(30.7)
RTI ANALYSIS**								
1st Analysis Date		3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
	ppb	(24.5 ± 3.5)	(9.40 ± 1.0)	(30.6 ± 3.1)	(10.0 ± 3.0)	(27.0 ± 15)	(10.0 ± 1.1)	(31.4 ± 3.6)
2nd Analysis Day***		52	52	52	52	52	52	52
	ppb	(22.8 ± 3.2)	(10.5 ± 1.0)	(32.0 ± 3.2)	(9.00 ± 3.0)	(26.0 ± 13)	(9.90 ± 1.1)	(29.5 ± 3.6)
3rd Analysis Day***		150	150	150	150	150	150	150
	ppb	(27.6 ± 5.2)	(10.3 ± 1.3)	(32.4 ± 4.5)	(7.10 ± 2.2)	(33.5 ± 1.1)	(10.4 ± 0.7)	(29.6 ± 5.0)
4th Analysis Day***		385	385	385	385	385	385	385
	ppb	(23.5 ± 4.1)	(11.0 ± 1.3)	(35.2 ± 4.9)	(9.00 ± 2.7)	(26.0 ± 8.0)	(11.1 ± 0.8)	(29.0 ± 4.6)
5th Analysis Day***		922	922	922	922	922	922	922
	ppb	NA	(9.75 ± 0.8)	(32.2 ± 2.7)	(6.18 ± 1.7)	(26.9 ± 6.9)	(10.8 ± 0.9)	(30.9 ± 3.6)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A3 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				RTI QUALITY CONTROL****			
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(16.0 ± 8.0)	(12.7 ± 1.6)	(7.90 ± 1.1)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day***	52	52	52	52	52	52	52
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration							
ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day***	922	922	922	922	922	922	922
ppb	NA	(15.3 ± 1.2)	(15.5 ± 1.4)	(13.2 ± 3.0)	(16.1 ± 4.2)	(10.2 ± 0.8)	(12.2 ± 1.5)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A4

Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	COMPOUND						
MANUFACTURER ANALYSIS							
THEORETICAL							
ppb	(10.0)	(10.1)	(10.3)	(33.0)	(30.0)	(30.3)	(3.03)
1st Analysis Date	4/15/85	4/15/85	4/15/85	4/15/85	4/15/85	4/15/85	4/15/85
ppb	(9.90)	(10.2)	(10.2)	(23.0)	(33.0)	(29.7)	(32.8)
2nd Analysis Date	6/3/85	6/3/85	6/3/85	6/3/85	6/3/85	6/3/85	6/3/85
ppb	(9.40)	(9.70)	(11.8)	(22.0)	(29.0)	(29.5)	(33.1)
RTI ANALYSIS**							
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(9.20 ± 1.4)	(10.2 ± 1.4)	(10.4 ± 1.0)	(25.0 ± 6.0)	(30.0 ± 17)	(29.0 ± 3.4)	(32.1 ± 3.7)
2nd Analysis Day***	70	70	70	70	70	70	70
ppb	(8.50 ± 1.2)	(10.1 ± 1.0)	(10.9 ± 1.1)	(28.0 ± 8.0)	(29.0 ± 15)	(30.8 ± 3.5)	(31.4 ± 3.8)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(7.60 ± 1.4)	(10.3 ± 1.3)	(11.7 ± 1.6)	(24.7 ± 7.7)	(33.7 ± 11)	(33.5 ± 2.3)	(30.8 ± 5.2)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(7.20 ± 1.3)	(11.3 ± 1.4)	(12.8 ± 1.8)	(30.4 ± 9.4)	(31.8 ± 10)	(31.4 ± 2.2)	(30.2 ± 4.8)
5th Analysis Day***	940	940	940	940	940	940	940
ppb	NA	(10.2 ± 0.8)	(10.9 ± 0.9)	(20.7 ± 5.6)	(26.2 ± 7.6)	(32.2 ± 2.4)	(31.9 ± 3.7)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A4 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
RTI QUALITY CONTROL****							
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day***	70	70	70	70	70	70	70
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration							
ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day***	940	940	940	940	940	940	940
ppb	NA	(15.3 ± 1.2)	(15.5 ± 1.4)	(13.2 ± 3.0)	(16.1 ± 4.2)	(10.2 ± 0.8)	(12.2 ± 1.5)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A5

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL ppb	(10.1)	(10.2)	(10.1)	(10.0)	(10.1)	(10.1)	(10.1)
1st Analysis Date ppb	4/12/85 (9.30)	4/12/85 (10.0)	4/12/85 (8.70)	4/12/85 (9.40)	4/12/85 (9.00)	4/12/85 (9.00)	4/12/85 (9.70)
2nd Analysis Date ppb	5/29/85 (9.60)	5/29/85 (9.80)	5/29/85 (9.30)	5/29/85 (9.30)	5/29/85 (8.60)	5/29/85 (9.20)	5/29/85 (8.90)
				RTI ANALYSIS**			
1st Analysis Date ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit
2nd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit
3rd Analysis Day*** ppb	151 (7.20 ± 1.4)	151 (10.2 ± 1.3)	151 (12.5 ± 1.7)	151 (6.70 ± 2.1)	151 (10.1 ± 3.3)	151 (10.5 ± 0.7)	151 (10.8 ± 1.8)
4th Analysis Day*** ppb	385 (7.30 ± 1.4)	385 (11.2 ± 1.4)	385 (9.60 ± 1.3)	385 (8.30 ± 2.6)	385 (10.5 ± 3.4)	385 (11.1 ± 0.8)	385 (9.80 ± 1.6)
5th Analysis Day*** ppb	923 (8.67 ± 1.2)	923 (9.90 ± 0.9)	923 (8.80 ± 0.7)	923 (7.06 ± 2.3)	923 (7.85 ± 2.8)	923 (11.1 ± 0.9)	923 (11.1 ± 1.6)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A5 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	RTI QUALITY CONTROL****						
1st Analysis Date ppb	3/9/86 (11.9 ± 1.7)	3/9/86 (20.4 ± 1.8)	3/9/86 (8.80 ± 0.9)	3/9/86 (11.0 ± 3.0)	3/9/86 (14.0 ± 8.0)	3/9/86 (13.5 ± 1.6)	3/9/86 (8.10 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day ppb	70 (15.0 ± 2.1)	70 (15.8 ± 1.6)	70 (21.5 ± 2.2)	70 (47.0 ± 14)	70 (42.0 ± 21)	70 (10.3 ± 1.2)	70 (11.4 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day ppb	151 (11.9 ± 2.2)	151 (15.1 ± 1.9)	151 (14.8 ± 2.0)	151 (12.3 ± 3.8)	151 (16.5 ± 5.4)	151 (9.60 ± 0.7)	151 (12.0 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day ppb	385 (9.60 ± 1.1)	385 (20.9 ± 1.2)	385 (9.70 ± 0.5)	385 (11.4 ± 2.4)	385 (14.3 ± 5.7)	385 (13.4 ± 1.1)	385 (7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day ppb	923 (11.1 ± 1.9)	923 (15.5 ± 1.2)	923 (15.5 ± 1.2)	923 (13.2 ± 3.1)	923 (16.4 ± 4.3)	923 (10.2 ± 0.9)	923 (12.5 ± 1.5)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A6

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
MANUFACTURER ANALYSIS							
THEORETICAL							
ppb	(30.0)	(10.0)	(30.9)	(10.0)	(30.0)	(10.2)	(30.0)
1st Analysis Date	7/23/85	7/23/85	7/23/85	7/23/85	7/23/85	7/23/85	7/23/85
ppb	(28.6)	(9.60)	(29.6)	(8.00)	(26.0)	(8.60)	(30.4)
2nd Analysis Date	8/27/85	8/27/85	8/27/85	8/27/85	8/27/85	8/27/85	8/27/85
ppb	(31.6)	(9.10)	(29.8)	(8.00)	(26.0)	(8.70)	(31.0)
RTI ANALYSIS**							
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(23.7 ± 3.4)	(9.70 ± 0.9)	(30.1 ± 3.0)	(10.0 ± 3.0)	(26.0 ± 15)	(9.80 ± 1.1)	(30.2 ± 3.4)
2nd Analysis Day***	52	52	52	52	52	52	52
ppb	(21.4 ± 3.0)	(10.1 ± 1.0)	(32.4 ± 3.3)	(10.0 ± 3.0)	(29.0 ± 15)	(10.5 ± 1.2)	(30.3 ± 3.6)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(25.7 ± 4.9)	(9.60 ± 1.2)	(31.8 ± 4.4)	(9.90 ± 3.1)	(33.5 ± 11)	(10.2 ± 0.7)	(29.8 ± 5.0)
4th Analysis Day***							
ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit
5th Analysis Day***	923	923	923	923	923	923	923
ppb	(24.2 ± 3.2)	(9.68 ± 0.9)	(32.1 ± 2.4)	(7.18 ± 2.3)	(19.7 ± 6.0)	(10.7 ± 0.8)	(30.0 ± 3.9)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A6 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				RTI QUALITY CONTROL****			
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(16.0 ± 8.0)	(12.7 ± 1.6)	(7.90 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 16)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day	923	923	923	923	923	923	923
ppb	(10.5 ± 1.7)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.8)	(13.1 ± 2.2)
NBS Concentration ppb	(10.8 ± 1.4)	(15.5 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A7

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				MANUFACTURER ANALYSIS			
THEORETICAL							
ppb	(10.0)	(10.2)	(10.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis Date	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85
ppb	(9.90)	(9.60)	(8.90)	(11.0)	(9.00)	(9.00)	(9.70)
2nd Analysis Date	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85
ppb	(9.80)	(9.80)	(9.30)	(8.00)	(7.00)	(9.00)	(8.80)
				RTI ANALYSIS**			
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(9.10 ± 1.3)	(10.2 ± 1.0)	(8.70 ± 0.9)	(9.00 ± 3.0)	(10.0 ± 6.0)	(10.6 ± 1.3)	(11.1 ± 1.5)
2nd Analysis Day***	72	72	72	72	72	72	72
ppb	(8.60 ± 1.2)	(10.0 ± 1.0)	(9.50 ± 1.0)	(9.00 ± 3.0)	(11.0 ± 6.0)	(10.6 ± 1.2)	(10.9 ± 1.3)
3rd Analysis Day***	150	150	150	150	150	150	150
ppb	(8.30 ± 1.6)	(10.3 ± 1.3)	(8.90 ± 1.2)	(9.90 ± 3.1)	(13.0 ± 4.2)	(10.9 ± 0.8)	(11.7 ± 2.0)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(7.20 ± 1.4)	(11.3 ± 1.4)	(9.60 ± 1.2)	(8.70 ± 2.7)	(10.8 ± 3.5)	(11.1 ± 0.8)	(10.8 ± 1.7)
5th Analysis Day***							
ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit

(continued)

Stability Study For Group III Compounds*
Cylinder III-A7 (continued)

Activity				COMPOUND			
	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				RTI QUALITY CONTROL****			
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	72	72	72	72	72	72	72
ppb	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
ppb	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day	923	923	923	923	923	923	923
ppb	(10.5 ± 1.7)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.8)	(13.1 ± 2.2)
NBS Concentration ppb	(10.8 ± 1.4)	(15.5 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A8

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL							
ppb	(10.0)	(10.2)	(10.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis Date	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85	4/10/85
ppb	(9.90)	(9.60)	(8.90)	(11.0)	(9.00)	(9.00)	(9.70)
2nd Analysis Date	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85	5/22/85
ppb	(9.80)	(9.80)	(9.30)	(8.00)	(7.00)	(9.00)	(8.80)
				RTI ANALYSIS**			
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(9.10 ± 1.3)	(10.0 ± 1.0)	(8.70 ± 0.9)	(9.00 ± 3.0)	(10.0 ± 6.0)	(10.3 ± 1.2)	(10.9 ± 1.4)
2nd Analysis Day***	70	70	70	70	70	70	70
ppb	(8.60 ± 1.2)	(10.1 ± 1.0)	(9.30 ± 0.9)	(11.0 ± 3.0)	(12.0 ± 6.0)	(10.6 ± 1.2)	(12.1 ± 1.5)
3rd Analysis Day***	151	151	151	151	151	151	151
ppb	(9.30 ± 1.8)	(9.70 ± 1.3)	(8.50 ± 1.1)	(8.80 ± 2.7)	(10.5 ± 3.4)	(10.7 ± 0.7)	(10.8 ± 1.8)
4th Analysis Day***	385	385	385	385	385	385	385
ppb	(7.80 ± 1.5)	(10.3 ± 1.5)	(10.6 ± 1.3)	(9.00 ± 2.8)	(10.6 ± 3.4)	(11.3 ± 0.7)	(11.2 ± 1.8)
5th Analysis Day***							
ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit

(continued)

Stability Study For Group III Compounds*
Cylinder III-A8 (continued)

	COMPOUND						
Activity	Freon 114	Freon 113	Vinyli-dene chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
				RTI QUALITY CONTROL****			
1st Analysis Date	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86	3/9/86
ppb	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	70	70	70	70	70	70	70
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration							
ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	151	151	151	151	151	151	151
ppb	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day	923	923	923	923	923	923	923
ppb	(10.5 ± 1.7)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.8)	(13.1 ± 2.2)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.5 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A9

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
MANUFACTURER ANALYSIS							
THEORETICAL ppb	(30.0)	(30.0)	(30.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis Date ppb	4/23/85 (27.6)	4/23/85 (28.9)	4/23/85 (28.0)	4/23/85 (10.0)	4/23/85 (9.00)	4/23/85 (8.80)	4/23/85 (9.60)
2nd Analysis Date ppb	6/4/85 (27.3)	6/4/85 (28.7)	6/4/85 (27.2)	6/4/85 (5.00)	6/4/85 (9.00)	6/4/85 (8.80)	6/4/85 (8.30)
RTI ANALYSIS**							
1st Analysis Date ppb	3/27/86 (24.8 ± 3.5)	3/27/86 (31.1 ± 3.1)	3/27/86 (31.3 ± 3.1)	3/27/86 (10.0 ± 3.0)	3/27/86 (10.0 ± 5.0)	3/27/86 (10.1 ± 1.2)	3/27/86 (10.2 ± 1.4)
2nd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit
3rd Analysis Day*** ppb	151 (29.7 ± 5.6)	151 (31.8 ± 4.1)	151 (33.0 ± 4.6)	151 (6.70 ± 2.1)	151 (14.9 ± 4.9)	151 (11.6 ± 0.8)	151 (11.1 ± 1.9)
4th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit
5th Analysis Day*** ppb	923 (25.7 ± 3.5)	923 (30.4 ± 2.3)	923 (31.7 ± 2.5)	923 (7.81 ± 2.2)	923 (10.9 ± 4.3)	923 (10.9 ± 1.1)	923 (10.9 ± 1.9)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A9 (continued)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				RTI QUALITY CONTROL****			
1st Analysis Date	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86	3/27/86
ppb	(11.7 ± 1.7)	(20.5 ± 1.8)	(8.50 ± 0.9)	(12.0 ± 3.0)	(14.0 ± 8.0)	(14.2 ± 1.6)	(8.00 ± 1.1)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
ppb	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	151	151	151	151	151	151	151
ppb	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
ppb	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)
5th Analysis Day	923	923	923	923	923	923	923
ppb	(11.1 ± 1.9)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.1 ± 3.1)	(17.0 ± 5.7)	(10.2 ± 0.7)	(13.1 ± 2.2)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A10

	COMPOUND						
Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	MANUFACTURER ANALYSIS						
THEORETICAL							
ppb	(140)	(140)	(120)	(100)	(100)	(150)	(150)
1st Analysis Date	5/9/86	5/9/86	5/9/86	5/9/86	5/9/86	5/9/86	5/9/86
ppb	(140)	(138)	(117)	(94.2)	(107)	(152)	(181)
	RTI ANALYSIS**						
1st Analysis Date	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86
ppb	(137 ± 19)	(152 ± 15)	(122 ± 12)	(112 ± 33)	(114 ± 57)	(159 ± 18)	(153 ± 19)
2nd Analysis Day***	97	97	97	97	97	97	97
ppb	(125 ± 23)	(143 ± 18)	(123 ± 17)	(114 ± 35)	(125 ± 41)	(161 ± 11)	(152 ± 26)
3rd Analysis Day***	331	331	331	331	331	331	331
ppb	(141 ± 25)	(159 ± 19)	(131 ± 17)	(107 ± 33)	(145 ± 46)	(167 ± 12)	(173 ± 29)
4th Analysis Day***	928	928	928	928	928	928	928
ppb	(148 ± 4.5)	(148 ± 3.4)	(124 ± 4.7)	(95.0 ± 13)	(117 ± 14)	(162 ± 5.2)	(158 ± 10)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A10 (continued)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				RTI QUALITY CONTROL****			
1st Analysis Date	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86
ppb	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concentration							
ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis Day	97	97	97	97	97	97	97
ppb	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	331	331	331	331	331	331	331
ppb	(11.0 ± 1.0)	(21.0 ± 1.3)	(9.60 ± 0.5)	(12.1 ± 2.6)	(15.9 ± 3.2)	(13.9 ± 1.2)	(8.80 ± 0.6)
NBS Concentration							
ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
4th Analysis Day	928	928	928	928	928	928	928
ppb	(196 ± 6.1)	(159 ± 3.7)	(167 ± 5.9)	(118 ± 16)	(132 ± 23)	(140 ± 4.7)	(162 ± 9.0
NBS Concentration							
ppb	(192 ± 4.0)	(158 ± 3.0)	(164 ± 6.0)	(104 ± 11)	(118 ± 25)	(137 ± 3.0)	(158 ± 5.0)

*Calibration was performed using NBS primary standard.
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A11

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL ppb	(140)	(140)	(140)	(120)	(120)	(150)	(150)
1st Analysis Date ppb	5/9/86 (139)	5/9/86 (140)	5/9/86 (142)	5/9/86 (111)	5/9/86 (116)	5/9/86 (155)	5/9/86 (182)
				RTI ANALYSIS**			
1st Analysis Date ppb	5/21/86 (139 ± 20)	5/21/86 (155 ± 15)	5/21/86 (148 ± 15)	5/21/86 (109 ± 32)	5/21/86 (134 ± 67)	5/21/86 (169 ± 19)	5/21/86 (167 ± 20)
2nd Analysis Day*** ppb	97 (131 ± 24)	97 (148 ± 19)	97 (152 ± 20)	97 (93.0 ± 29)	97 (152 ± 49)	97 (169 ± 12)	97 (156 ± 26)
3rd Analysis Day*** ppb	331 (141 ± 25)	331 (156 ± 19)	331 (154 ± 20)	331 (89.0 ± 24)	331 (162 ± 52)	331 (172 ± 12)	331 (169 ± 27)
4th Analysis Day*** ppb	928 (148 ± 4.9)	928 (151 ± 4.0)	928 (147 ± 5.7)	928 (61.9 ± 10)	928 (135 ± 20)	928 (168 ± 5.6)	928 (164 ± 11)

(continued)

Stability Study For Group III Compounds*
Cylinder III-A11 (continued)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinyli-dene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chloro-benzene**
				RTI QUALITY CONTROL****			
1st Analysis Date ppb	5/21/86 (14.6 ± 2.0)	5/21/86 (15.8 ± 1.6)	5/21/86 (21.5 ± 2.2)	5/21/86 (48.0 ± 14)	5/21/86 (42.0 ± 21)	5/21/86 (10.5 ± 1.2)	5/21/86 (11.0 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis Day ppb	97 (11.9 ± 2.2)	97 (15.1 ± 1.9)	97 (14.8 ± 2.0)	97 (12.3 ± 3.8)	97 (16.5 ± 5.4)	97 (9.60 ± 0.7)	97 (12.0 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day ppb	331 (11.0 ± 1.0)	331 (21.0 ± 1.3)	331 (9.60 ± 0.5)	331 (12.1 ± 2.6)	331 (15.9 ± 3.2)	331 (13.9 ± 1.2)	331 (8.80 ± 0.6)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
4th Analysis Day ppb	928 (196 ± 6.1)	928 (159 ± 3.7)	928 (167 ± 5.9)	928 (118 ± 16)	928 (132 ± 23)	928 (140 ± 4.7)	928 (162 ± 9.0)
NBS Concentration ppb	(192 ± 4.0)	(158 ± 3.00	(164 ± 6.0)	(104 ± 11)	(118 ± 25)	(137 ± 3.0)	(158 ± 5.0)

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*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A12

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
	MANUFACTURER ANALYSIS						
THEORETICAL ppb	(140)	(140)	(140)	(120)	(120)	(150)	(150)
1st Analysis Date ppb	5/9/86 (143)	5/9/86 (139)	5/9/86 (138)	5/9/86 (118)	5/9/86 (113)	5/9/86 (148)	5/9/86 (175)
	RTI ANALYSIS**						
1st Analysis Date ppb	5/21/86 (138 ± 20)	5/21/86 (151 ± 15)	5/21/86 (148 ± 15)	5/21/86 (143 ± 43)	5/21/86 (134 ± 67)	5/21/86 (163 ± 18)	5/21/86 (157 ± 19)
2nd Analysis Day*** ppb	97 (128 ± 24)	97 (145 ± 19)	97 (152 ± 21)	97 (152 ± 47)	97 (154 ± 50)	97 (165 ± 11)	97 (157 ± 27)
3rd Analysis Day*** ppb	331 (142 ± 26)	331 (155 ± 20)	331 (157 ± 22)	331 (144 ± 44)	331 (164 ± 53)	331 (162 ± 11)	331 (161 ± 27)
4th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit

(continued)

Stability Study For Group III Compounds*
Cylinder III-A12 (continued)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				RTI QUALITY CONTROL****			
1st Analysis Date	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86	5/21/86
ppb	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concentration ppb	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis Day	97	97	97	97	97	97	97
ppb	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	331	331	331	331	331	331	331
ppb	(11.0 ± 1.0)	(21.0 ± 1.3)	(9.60 ± 0.5)	(12.1 ± 2.6)	(15.9 ± 3.2)	(13.9 ± 1.2)	(8.80 ± 0.6)
NBS Concentration ppb	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)

*Calibration was performed using NBS primary standard.

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study For Group III Compounds*
Cylinder III-A13

Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	COMPOUND						
MANUFACTURER ANALYSIS							
THEORETICAL ppb	(10.0)	(20.3)	(10.2)	(20.4)	(20.4)	(10.3)	(10.2)
1st Analysis Date ppb	4/28/87 (9.60)	4/28/87 (19.1)	4/28/87 (9.89)	4/28/87 (20.5)	4/28/87 (18.0)	4/28/87 (10.8)	4/28/87 (12.1)
RTI ANALYSIS**							
1st Analysis Date ppb	7/10/87 (11.0 ± 2.8)	7/10/87 (22.0 ± 4.4)	7/10/87 (11.9 ± 2.5)	7/10/87 (17.8 ± 3.9)	7/10/87 (22.9 ± 5.1)	7/10/87 (11.1 ± 1.0)	7/10/87 (10.9 ± 1.1)
2nd Analysis Day*** ppb	25 NA	25 (20.2 ± 4.1)	25 (11.2 ± 2.4)	25 (17.2 ± 3.8)	25 (22.8 ± 5.1)	25 (11.2 ± 1.0)	25 (11.0 ± 1.2)
3rd Analysis Day*** ppb	454 (8.12 ± 1.2)	454 (20.3 ± 1.6)	454 (10.9 ± 1.0)	454 (15.9 ± 4.3)	454 (21.2 ± 7.8)	454 (11.2 ± 0.9)	454 (11.1 ± 1.7)
RTI QUALITY CONTROL******							
1st Analysis Date ppb	7/10/87 (11.4 ± 2.9)	7/10/87 (16.4 ± 3.3)	7/10/87 (15.7 ± 3.3)	7/10/87 (13.8 ± 3.1)	7/10/87 (16.7 ± 3.7)	7/10/87 (10.2 ± 0.9)	7/10/87 (12.2 ± 1.3)
NBS Concentration ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day ppb	25 NA	25 (15.4 ± 3.1)	25 (15.1 ± 3.2)	25 NA	25 (15.9 ± 3.5)	25 (9.48 ± 0.8)	25 (11.8 ± 1.2)
NBS Concentration ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day ppb	454 (10.3 ± 1.5)	454 (15.3 ± 1.3)	454 (15.5 ± 1.2)	454 (13.4 ± 3.2)	454 (17.0 ± 6.0)	454 (10.1 ± 0.8)	454 (12.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard

**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

***Number of days after 1st RTI analysis date.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed

Stability Study For Group III Compounds*
Cylinder III-A14 (in Air)

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL							
ppb	(10.0)	(10.0)	(10.2)	(20.0)	(20.0)	(10.1)	(10.0)
1st Analysis Date	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87
ppb	(9.92)	(9.88)	(9.91)	(17.7)	(17.0)	(10.3)	(11.7)
				RTI ANALYSIS**			
1st Analysis Date	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87
ppb	NA	(9.73 ± 2.0)	(9.54 ± 2.0)	(16.8 ± 3.7)	(18.4 ± 4.1)	(10.3 ± 0.9)	(10.6 ± 1.1)
2nd Analysis Day***	21	21	21	21	21	21	21
ppb	NA	(10.4 ± 2.1)	(10.4 ± 2.2)	(16.3 ± 3.6)	(18.8 ± 4.2)	(10.1 ± 0.9)	(10.3 ± 1.1)
3rd Analysis Day***	450	450	450	450	450	450	450
ppb	(8.75 ± 1.5)	(10.1 ± 0.8)	(10.6 ± 0.9)	(15.0 ± 4.9)	(16.1 ± 6.5)	(10.6 ± 0.8)	(10.5 ± 1.4)
				RTI QUALITY CONTROL****			
1st Analysis Date	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87
ppb	NA	(16.1 ± 3.2)	(16.2 ± 3.4)	(14.5 ± 3.2)	(16.7 ± 3.7)	(10.9 ± 0.9)	(12.6 ± 1.3)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	21	21	21	21	21	21	21
ppb	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	450	450	450	450	450	450	450
ppb	(10.3 ± 1.5)	(15.3 ± 1.2)	(15.5 ± 1.2)	(13.4 ± 3.2)	(17.0 ± 6.0)	(10.1 ± 0.8)	(12.2 ± 1.5)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID
***Number of days after 1st RTI analysis date
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis
NA = Not analyzed

Stability Study For Group III Compounds*
Cylinder III-A15

Activity	COMPOUND Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
MANUFACTURER ANALYSIS							
THEORETICAL							
ppb	(10.0)	(20.7)	(10.4)	(20.7)	(20.7)	(10.4)	(10.3)
1st Analysis Date	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87
ppb	(9.93)	(19.3)	(9.99)	(18.0)	(17.0)	(10.8)	(11.8)
RTI ANALYSIS**							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
ppb	(11.1 ± 2.8)	NA	NA	(16.6 ± 3.7)	(18.9 ± 4.2)	(10.0 ± 0.9)	(9.71 ± 1.0)
2nd Analysis Day***	19	19	19	19	19	19	19
ppb	NA	NA	(9.40 ± 2.0)	(15.8 ± 3.5)	(19.2 ± 4.3)	(10.1 ± 0.9)	(10.2 ± 1.1)
3rd Analysis Day***	448	448	448	448	448	448	448
ppb	(8.05 ± 1.1)	(20.4 ± 1.7)	(10.9 ± 0.9)	(18.2 ± 4.5)	(23.9 ± 6.7)	(11.2 ± 0.9)	(11.1 ± 1.4)
RTI QUALITY CONTROL***							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
ppb	(11.4 ± 2.9)	NA	NA	(15.1 ± 3.3)	(16.3 ± 3.6)	(10.3 ± 0.9)	(12.6 ± 1.3)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	19	19	19	19	19	19	19
ppb	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	448	448	448	448	448	448	448
ppb	(10.3 ± 1.5)	(15.3 ± 1.2)	(15.4 ± 1.2)	(13.3 ± 3.1)	(16.9 ± 5.4)	(10.1 ± 0.7)	(12.2 ± 1.5)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 3.1)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

*Calibration was performed using NBS primary standard
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID
***Number of days after 1st RTI analysis date
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis
NA = Not analyzed

Stability Study For Group III Compounds*
Cylinder III-A16

Activity	Freon 114	Freon 113	Vinylidene chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
				COMPOUND			
				MANUFACTURER ANALYSIS			
THEORETICAL							
ppb	(10.0)	(20.3)	(10.2)	(20.3)	(20.3)	(10.2)	(10.1)
1st Analysis Date	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87
ppb	(9.24)	(19.1)	(10.0)	(18.7)	(18.4)	(10.7)	(12.0)
				RTI ANALYSIS**			
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
ppb	(11.3 ± 2.9)	(21.3 ± 4.3)	(11.5 ± 2.4)	(16.7 ± 3.7)	(19.0 ± 4.2)	(9.58 ± 0.8)	(10.0 ± 1.1)
2nd Analysis Day***	19	19	19	19	19	19	19
ppb	(10.6 ± 2.7)	(21.3 ± 4.3)	NA	(17.5 ± 3.9)	(20.4 ± 4.6)	(10.0 ± 0.9)	(10.2 ± 1.1)
3rd Analysis Day***	448	448	448	448	448	448	448
ppb	(8.06 ± 1.1)	(20.3 ± 1.7)	(10.9 ± 1.0)	(20.3 ± 5.4)	(22.9 ± 6.4)	(11.2 ± 0.9)	(11.2 ± 1.5)
				RTI QUALITY CONTROL****			
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
ppb	(11.4 ± 2.9)	NA	NA	(15.2 ± 3.5)	(16.3 ± 3.6)	(10.3 ± 0.9)	(12.6 ± 1.3)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	19	19	19	19	19	19	19
ppb	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concentration							
ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	448	448	448	448	448	448	448
ppb	(10.3 ± 1.5)	(15.3 ± 1.2)	(15.4 ± 1.2)	(13.3 ± 3.1)	(16.9 ± 5.4)	(10.1 ± 0.7)	(12.2 ± 1.5)
NBS Concentration							
ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.2 ± 1.5)

*Calibration was performed using NBS primary standard
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis
NA = Not analyzed

Stability Study For Group III Compounds*
Cylinder III-A17

	COMPOUND						
Activity	**Freon 114**	**Freon 113**	**Vinylidene chloride**	**Acetone**	**1,4-Dioxane**	**Toluene**	**Chlorobenzene**
				MANUFACTURER ANALYSIS			
THEORETICAL ppb	(10.0)	(20.3)	(10.2)	(20.4)	(20.4)	(10.3)	(10.2)
1st Analysis Date ppb	4/27/87 (9.10)	4/27/87 (19.1)	4/27/87 (9.94)	4/27/87 (20.0)	4/27/87 (18.4)	4/27/87 (10.3)	4/27/87 (11.1)
				RTI ANALYSIS**			
1st Analysis Date ppb	7/16/87 NA	7/16/87 NA	7/16/87 NA	7/16/87 (17.8 ± 4.0)	7/16/87 (20.9 ± 4.7)	7/16/87 (10.8 ± 0.9)	7/16/87 (10.7 ± 1.1)
2nd Analysis Day*** ppb	18 (10.0 ± 2.5)	18 (20.6 ± 4.1)	18 (10.6 ± 2.2)	18 (18.0 ± 3.9)	18 (21.6 ± 4.8)	18 (10.8 ± 0.9)	18 (10.8 ± 1.1)
3rd Analysis Day*** ppb	448 (8.17 ± 1.2)	448 (20.3 ± 1.6)	448 (10.8 ± 0.8)	448 (16.8 ± 4.3)	448 (22.1 ± 7.8)	448 (11.0 ± 0.8)	448 (10.8 ± 1.3)
				RTI QUALITY CONTROL***			
1st Analysis Date ppb	7/16/87 (11.4 ± 2.9)	7/16/87 NA	7/16/87 NA	7/16/87 (15.1 ± 3.3)	7/16/87 (16.3 ± 3.6)	7/16/87 (10.7 ± 0.9)	7/16/87 (12.6 ± 1.3)
NBS Concentration ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day ppb	18 NA	18 (15.4 ± 3.1)	18 (15.1 ± 3.2)	18 (12.8 ± 2.8)	18 (15.9 ± 3.5)	18 (9.48 ± 0.8)	18 (11.8 ± 1.2)
NBS Concentration ppb	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day ppb	448 (10.3 ± 1.5)	448 (15.3 ± 1.2)	448 (15.4 ± 1.2)	448 (13.3 ± 3.1)	448 (16.9 ± 5.4)	448 (10.1 ± 0.7)	448 (12.2 ± 1.5)
NBS Concentration ppb	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.2 ± 1.5)

*Calibration was performed using NBS primary standard
**All RTI analyses were performed using cryogenic preconcentration followed by GC/FID
***Number of days after 1st RTI analysis date
****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis
NA = Not analyzed

Stability Study for Group IV Compounds*
Cylinder No. IV-A1

	COMPOUND					
Activity	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL						
ppb	(10)	(16)	(35)	(30)	(10)	(30)
1st Analysis Date	8/14/86	8/14/86	8/14/86	8/14/86	8/14/86	8/14/86
ppb	(10.1)	(10.3)	(29.7)	(25.0)	(8.42)	(31.2)
RTI ANALYSIS**						
1st Analysis Date	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87
ppb	(10.8 ± 0.7)	NA	NA	(30.9 ± 3.0)	(9.70 ± 0.7)	(31.5 ± 3.5)
2nd Analysis Day***	169	169	169	169	169	169
ppb	(10.2 ± 0.7)	NA	NA	(28.2 ± 2.6)	(9.73 ± 0.7)	(31.6 ± 3.7)
3rd Analysis Day***	568	568	568	568	568	568
ppb	(11.2 ± 0.8)	NA	NA	(30.2 ± 2.2)	(10.1 ± 1.4)	(33.9 ± 3.4)
RTI QUALITY CONTROL******						
1st Analysis Date	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87
ppb	(18.8 ± 1.3)	NA	NA	(18.8 ± 1.7)	(20.1 ± 1.4)	(19.4 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day	169	169	169	169	169	169
ppb	(20.0 ± 1.4)	NA	NA	(19.6 ± 1.8)	(20.0 ± 1.4)	(18.9 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day	568	568	568	568	568	568
ppb	(9.55 ± 1.0)	NA	NA	(14.9 ± 2.1)	(12.5 ± 1.7)	(15.7 ± 2.6)
NBS Concen. ppb	(9.2)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A2

	COMPOUND					
Activity	**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
			MANUFACTURER ANALYSIS			
THEORETICAL ppb	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis Date ppb	9/17/86 (32.2)	9/17/86 (13.4)	9/17/86 (12.3)	9/17/86 (8.62)	9/17/86 (23.9)	9/17/86 (10.7)
			RTI ANALYSIS**			
1st Analysis Date ppb	5/07/87 (27.8 ± 1.9)	5/07/87 NA	5/07/87 NA	5/07/87 (10.7 ± 1.0)	5/07/87 (20.4 ± 1.4)	5/07/87 (11.5 ± 1.3)
2nd Analysis Day*** ppb	102 (26.7 ± 1.8)	102 NA	102 NA	102 (10.8 ± 1.0)	102 (19.6 ± 1.4)	102 (11.6 ± 1.3)
3rd Analysis Day*** ppb	497 (33.9 ± 2.2)	497 NA	497 NA	497 (10.7 ± 0.8)	497 (20.1 ± 1.3)	497 (12.0 ± 1.4)
			RTI QUALITY CONTROL****			
1st Analysis Date ppb	5/07/87 (21.7 ± 1.5)	5/07/87 NA	5/07/87 NA	5/07/87 (20.7 ± 1.9)	5/07/87 (20.5 ± 1.4)	5/07/87 (17.6 ± 1.9)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	102 (20.5 ± 1.4)	102 NA	102 NA	102 (21.2 ± 2.0)	102 (20.0 ± 1.4)	102 (18.4 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	497 (9.55 ± 1.0)	497 NA	497 NA	497 (14.9 ± 2.1)	497 (12.5 ± 1.7)	497 (15.7 ± 2.6)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A3

Activity	COMPOUND 1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(10)	(15)	(15)	(10)	(10)	(10)
1st Analysis Date ppb	8/05/86 (10.5)	8/05/86 (11.0)	8/05/86 (15.1)	8/05/86 (10.8)	8/05/86 (7.67)	8/05/86 (9.57)
RTI ANALYSIS**						
1st Analysis Date ppb	5/04/87 (10.8 ± 0.7)	5/04/87 NA	5/04/87 NA	5/04/87 (10.4 ± 1.0)	5/04/87 (10.7 ± 0.8)	5/04/87 (11.0 ± 1.2)
2nd Analysis Day*** ppb	101 NA	101 NA	101 NA	101 (11.0 ± 1.0)	101 (10.1 ± 0.7)	101 (11.5 ± 1.3)
3rd Analysis Day*** ppb	500 (11.5 ± 0.8)	500 NA	500 NA	500 (11.0 ± 1.1)	500 (10.5 ± 1.4)	500 (12.8 ± 1.6)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	5/04/87 (21.8 ± 1.5)	5/04/87 NA	5/04/87 NA	5/04/87 (20.6 ± 1.9)	5/04/87 (18.8 ± 1.3)	5/04/87 (18.1 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	101 (20.4 ± 1.4)	101 NA	101 NA	101 (19.1 ± 1.8)	101 (19.1 ± 13)	101 (18.4 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	500 (9.55 ± 1.0)	500 NA	500 NA	500 (14.9 ± 2.1)	500 (12.5 ± 1.7)	500 (15.7 ± 2.6)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A4

	COMPOUND					
Activity	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL						
ppb	(10)	(16)	(37)	(32)	(11)	(32)
1st Analysis Date	8/06/86	8/06/86	8/06/86	8/06/86	8/06/86	8/06/86
ppb	(10.2)	(12.3)	(37.8)	(23.9)	(8.84)	(29.4)
RTI ANALYSIS**						
1st Analysis Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	(7/20/87)
ppb	(11.9 ± 0.8)	NA	NA	(32.8 ± 3.0)	(10.1 ± 0.7)	(33.1 ± 3.7)
2nd Analysis Day***	23	23	23	23	23	23
ppb	(11.8 ± 0.8)	NA	NA	(33.1 ± 3.1)	(10.0 ± 0.7)	(33.2 ± 3.7)
3rd Analysis Day***	423	423	423	423	423	423
ppb	(11.1 ± 0.9)	NA	NA	(32.1 ± 2.9)	(9.90 ± 0.8)	(35.7 ± 3.7)
RTI QUALITY CONTROL****						
1st Analysis Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
ppb	(20.0 ± 1.4)	NA	NA	(20.0 ± 1.8)	(18.1 ± 1.3)	(18.2 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day	23	23	23	23	23	23
ppb	(19.7 ± 1.3)	NA	NA	(18.9 ± 1.7)	(19.2 ± 1.4)	(19.4 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day	423	423	423	423	423	423
ppb	(9.55 ± 1.0)	NA	NA	(14.9 ± 2.1)	(12.5 ± 1.7)	(15.7 ± 2.6)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A5

	COMPOUND					
Activity	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(6006)	(6002)	(8038)	(6027)	(8037)	(8038)
1st Analysis Date	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86
ppb	(5692)	(4827)	(7687)	(6038)	(8057)	(8378)
RTI ANALYSIS**						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	(10/22/86
ppb	(5826 ± 220)	(6252 ± 235)	(8404 ± 318)	(6267 ± 260)	(5413 ± 310)	(9122 ± 230)
2nd Analysis Day***	91	91	91	91	91	91
ppb	(5780 ± 220)	(5430 ± 230)	(8080 ± 320)	(5930 ± 250)	(5800 ± 330)	(8440 ± 210)
3rd Analysis Day***	301	301	301	301	301	301
ppb	(5800 ± 221)	(5538 ± 240)	(8215 ± 330)	(6127 ± 270)	(5729 ± 320)	(8521 ± 220)
4th Analysis Day***	708	708	708	708	708	708
ppb	(6137 ± 304)	(6085 ± 393)	(8624 ± 471)	(6008 ± 377)	(7893 ± 698)	(7695 ± 110)
RTI QUALITY CONTROL****						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
ppb	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day	91	91	91	91	91	91
ppb	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

(continued)

Stability Study for Group IV Compounds*
Cylinder No. IV-A5 (continued)

		COMPOUND					
Activity		1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
3rd Analysis Day		301	301	301	301	301	301
	ppb	(2490 ± 87)	(2730 ± 100)	(2300 ± 80)	(2225 ± 85)	(2000 ± 57)	(1880 ± 156)
NBS Concen.	ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
4th Analysis Day	708	708	708	708	708	708	
	ppb	(1484 ± 116)	(2642 ± 244)	(2234 ± 159)	(2224 ± 188)	(2332 ± 186)	(1811 ± 244)
NBS Concen.	ppb	(1440 ± 20)	(2400 ± 70)	(2130 ± 60)	(2220 ± 80)	(2290 ± 60)	(1900 ± 30)

*An NBS primary standard was used for calibration.

**First and second RTI analyses were performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study for Group IV Compounds*
Cylinder No. IV-A6

Activity		COMPOUND				
	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(30)	(20)	(20)	(30)	(10)	(30)
1st Analysis Date ppb	7/23/86 (31.9)	7/23/86 (12.5)	7/23/86 (15.0)	7/23/86 (23.4)	7/23/86 (8.69)	7/23/86 (31.2)
RTI ANALYSIS**						
1st Analysis Date ppb	7/20/87 (38.6 ± 2.6)	7/20/87 NA	7/20/87 NA	7/20/87 (29.5 ± 2.7)	7/20/87 (9.90 ± 0.7)	7/20/87 (31.8 ± 3.5)
2nd Analysis Day*** ppb	22 (38.2 ± 2.6)	22 NA	22 NA	22 (27.9 ± 2.6)	22 (9.00 ± 0.6)	22 (30.8 ± 3.4)
3rd Analysis Day*** ppb	423 (34.5 ± 2.3)	423 NA	423 NA	423 (29.9 ± 1.9)	423 (8.82 ± 0.7)	423 (34.7 ± 3.0)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	7/20/87 (20.0 ± 1.4)	7/20/87 NA	7/20/87 NA	7/20/87 (20.0 ± 1.8)	7/20/87 (18.1 ± 1.3)	7/20/87 (18.2 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	22 (19.5 ± 1.3)	22 NA	22 NA	22 (19.6 ± 1.8)	22 (19.1 ± 1.3)	22 (19.3 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	423 (9.55 ± 1.0)	423 NA	423 NA	423 (14.9 ± 2.1)	423 (12.5 ± 1.7)	423 (15.7 ± 2.6)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A7

		COMPOUND					
Activity		**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
				MANUFACTURER ANALYSIS			
THEORETICAL	ppb	(30)	(20)	(21)	(31)	(10)	(31)
1st Analysis Date		7/23/86	7/23/86	7/23/86	7/23/86	7/23/86	7/23/86
	ppb	(32.1)	(12.9)	(16.0)	(24.6)	(8.71)	(38.7)
				RTI ANALYSIS**			
1st Analysis Date		2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
	ppb	(29.6 ± 2.0)	NA	NA	(29.7 ± 2.7)	(10.3 ± 0.7)	(34.2 ± 3.8)
2nd Analysis Day***		173	173	173	173	173	173
	ppb	(30.9 ± 2.1)	NA	NA	(29.5 ± 2.7)	(10.5 ± 0.7)	(33.1 ± 3.7)
3rd Analysis Day***		578	578	578	578	578	578
	ppb	(34.2 ± 2.4)	NA	NA	(30.4 ± 2.2)	(7.04 ± 1.3)	(34.8 ± 2.8)
				RTI QUALITY CONTROL****			
1st Analysis Date		2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
	ppb	(18.6 ± 1.3)	NA	NA	(18.9 ± 1.7)	(19.1 ± 1.3)	(18.9 ± 2.1)
NBS Concen.	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day		173	173	173	173	173	173
	ppb	(19.7 ± 1.3)	NA	NA	(18.9 ± 1.8)	(19.2 ± 1.4)	(19.4 ± 2.1)
NBS Concen.	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day		578	578	578	578	578	578
	ppb	(9.67 ± 0.9)	NA	NA	(14.6 ± 1.2)	(12.1 ± 1.7)	(14.7 ± 1.0)
NBS Concen.	ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A8

	COMPOUND					
Activity	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(6006)	(6002)	(8014)	(6009)	(8013)	(8013)
1st Analysis Date ppb	7/09/86 (5722)	7/09/86 (5072)	7/09/86 (7609)	7/09/86 (6068)	7/09/86 (8129)	7/09/86 (8396)
RTI ANALYSIS**						
1st Analysis Date ppb	10/22/86 (5922 ± 225)	10/22/86 (6500 ± 260)	10/22/86 (8333 ± 350)	10/22/86 (6200 ± 249)	10/22/86 (8487 ± 360)	(10/22/86 (9065 ± 725)
2nd Analysis Day*** ppb	91 (5890 ± 220)	91 (5800 ± 250)	91 (8120 ± 320)	91 (5700 ± 240)	91 (7860 ± 330)	91 (8300 ± 710)
3rd Analysis Day*** ppb	301 (5901 ± 210)	301 (6000 ± 270)	301 (8205 ± 330)	301 (5850 ± 250)	301 (7900 ± 335)	301 (8501 ± 726)
4th Analysis Day*** ppb	708 (6208 ± 370)	708 (6490 ± 516)	708 (9645 ± 508)	708 (6040 ± 360)	708 (8026 ± 678)	708 (7839 ± 914)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	10/22/86 (2942 ± 100)	10/22/86 (2878 ± 130)	10/22/86 (2338 ± 95)	10/22/86 (2214 ± 98)	10/22/86 (1996 ± 81)	10/22/86 (1975 ± 166)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day ppb	91 (2500 ± 90)	91 (2710 ± 110)	91 (2380 ± 90)	91 (2250 ± 90)	91 (1990 ± 80)	91 (1910 ± 160)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

(continued)

Stability Study for Group IV Compounds*
Cylinder No. IV-A8 (continued)

	COMPOUND					
Activity	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
3rd Analysis Day ppb	301 (2490 ± 87)	301 (2730 ± 100)	301 (2300 ± 80)	301 (2225 ± 85)	301 (2000 ± 57)	301 (1880 ± 156)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
4th Analysis Day ppb	708 (1484 ± 116)	708 (2642 ± 244)	708 (2234 ± 159)	708 (2224 ± 188)	708 (2332 ± 186)	708 (1811 ± 244)
NBS Concen. ppb	(1440 ± 20)	(2400 ± 70)	(2130 ± 60)	(2220 ± 80)	(2290 ± 60)	(1900 ± 30)

*An NBS primary standard was used for calibration.

**First and second RTI analyses were performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study for Group IV Compounds*
Cylinder No. IV-A9

	COMPOUND					
Activity	**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(30)	(20)	(20)	(30)	(10)	(30)
1st Analysis Date ppb	7/22/86 (32.1)	7/22/86 (12.8)	7/22/86 (14.9)	7/22/86 (23.8)	7/22/86 (9.37)	7/22/86 (37.1)
RTI ANALYSIS**						
1st Analysis Date ppb	5/04/87 (30.3 ± 2.1)	5/04/87 NA	5/04/87 NA	5/04/87 (24.5 ± 2.3)	5/04/87 (10.7 ± 0.8)	5/04/87 (33.9 ± 3.8)
2nd Analysis Day*** ppb	102 (30.7 ± 2.1)	102 NA	102 NA	102 (24.7 ± 2.3)	102 (9.31 ± 0.7)	102 (33.7 ± 3.7)
3rd Analysis Day*** ppb	506 (34.7 ± 2.6)	506 NA	506 NA	506 (29.4 ± 3.6)	506 (7.74 ± 1.1)	506 (34.4 ± 3.4)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	5/04/87 (21.8 ± 1.5)	5/04/87 NA	5/04/87 NA	5/04/87 (20.6 ± 1.9)	5/04/87 (18.8 ± 1.3)	5/04/87 (18.1 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	102 (20.0 ± 1.4)	102 NA	102 NA	102 (19.6 ± 1.8)	102 (20.0 ± 1.4)	102 (18.9 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	506 (9.57 ± 0.7)	506 NA	506 NA	506 (15.5 ± 1.7)	506 (12.8 ± 1.3)	506 (15.9 ± 1.2)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A10

Activity	COMPOUND 1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis Date ppb	9/16/86 (32.6)	9/1686 (16.7)	9/16/86 (10.7)	9/16/86 (9.06)	9/16/86 (24.2)	9/16/86 (10.9)
RTI ANALYSIS**						
1st Analysis Date ppb	5/04/87 (28.4 ± 1.9)	5/04/87 NA	5/04/87 NA	5/04/87 (10.4 ± 1.0)	5/04/87 (28.2 ± 2.0)	5/04/87 (11.5 ± 1.3)
2nd Analysis Day*** ppb	98 (28.5 ± 1.9)	98 NA	98 NA	98 (10.4 ± 1.0)	98 (29.3 ± 2.1)	98 (11.5 ± 1.3)
3rd Analysis Day*** ppb	503 (34.3 ± 2.3)	503 NA	503 NA	503 (10.1 ± 1.0)	503 (27.8 ± 5.0)	503 (11.5 ± 0.9)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	5/04/87 (21.8 ± 1.5)	5/04/87 NA	5/04/87 NA	5/04/87 (20.6 ± 1.9)	5/04/87 (18.8 ± 1.3)	5/04/87 (18.1 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	98 (19.9 ± 1.3)	98 NA	98 NA	98 (19.0 ± 1.8)	98 (18.6 ± 1.3)	98 (18.9 ± 2.1)
NBS Concen ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	503 (9.67 ± 0.9)	503 NA	503 NA	503 (14.6 ± 1.2)	503 (12.1 ± 1.7)	503 (14.7 ± 1.0)
NBS Concen ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID

***Number of days after 1st RTI analysis

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed

Stability Study for Group IV Compounds*
Cylinder No. IV-A11

Activity	COMPOUND					
	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(800)	(800)	(1021)	(816)	(1020)	(1020)
1st Analysis Date ppb	7/07/86 (811)	7/07/86 (595)	7/07/86 (873)	7/07/86 (826)	7/07/86 (1044)	7/07/86 (1069)
RTI ANALYSIS**						
1st Analysis Date ppb	10/22/86 (803 ± 30)	10/22/86 (694 ± 28)	10/22/86 (917 ± 31)	10/22/86 (814 ± 33)	10/22/86 (1180 ± 62)	10/22/86 (1211 ± 110)
2nd Analysis Day*** ppb	91 (940 ± 40)	91 (700 ± 30)	91 (960 ± 40)	91 (840 ± 40)	91 (1010 ± 40)	91 (1090 ± 90)
3rd Analysis Day*** ppb	302 (923 ± 35)	302 (697 ± 30)	302 (932 ± 36)	302 (823 ± 36)	302 (1080 ± 50)	302 (1130 ± 98)
4th Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL****						
1st Analysis Date ppb	10/22/86 (2942 ± 100)	10/22/86 (2878 ± 130)	10/22/86 (2338 ± 95)	10/22/86 (2214 ± 98)	10/22/86 (1996 ± 81)	10/22/86 (1975 ± 166)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day ppb	91 (2500 ± 90)	91 (2710 ± 110)	91 (2380 ± 90)	91 (2250 ± 90)	91 (1990 ± 80)	91 (1910 ± 160)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

(continued)

Stability Study for Group IV Compounds*
Cylinder No. IV-A11 (continued)

	COMPOUND					
Activity	**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
3rd Analysis Day	302	302	302	302	302	302
ppb	(2496 ± 86)	(2720 ± 112)	(2350 ± 70)	(2245 ± 88)	(2000 ± 82)	(1900 ± 155)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

*An NBS primary standard was used for calibration.

**First and second RTI analyses were performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study for Group IV Compounds*
Cylinder No. IV-A12

Activity	COMPOUND					
	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(2000)	(2000)	(2987)	(1991)	(2984)	(2988)
1st Analysis Date ppb	7/08/86 (1995)	7/08/86 (1564)	7/08/86 (2520)	7/08/86 (1977)	7/08/86 (2951)	7/08/86 (2932)
RTI ANALYSIS**						
1st Analysis Date ppb	10/22/86 (2040 ± 71)	10/22/86 (1848 ± 86)	10/22/86 (2759 ± 111)	10/22/86 (1999 ± 110)	10/22/86 (2961 ± 120)	(10/22/86 (3358 ± 240)
2nd Analysis Day*** ppb	91 (2070 ± 80)	91 (1790 ± 80)	91 (2750 ± 110)	91 (1890 ± 80)	91 (2960 ± 120)	91 (3540 ± 330)
3rd Analysis Day*** ppb	302 (2060 ± 75)	302 (1805 ± 81)	302 (2752 ± 110)	302 (1920 ± 85)	302 (2958 ± 120)	302 (3480 ± 260)
4th Analysis Day*** ppb	708 (2122 ± 114)	708 (1849 ± 133)	708 (2755 ± 135)	708 (1980 ± 120)	708 (2844 ± 221)	708 (2700 ± 341)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	10/22/86 (2942 ± 100)	10/22/86 (2878 ± 130)	10/22/86 (2338 ± 95)	10/22/86 (2214 ± 98)	10/22/86 (1996 ± 81)	10/22/86 (1975 ± 166)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day ppb	91 (2500 ± 90)	91 (2710 ± 110)	91 (2380 ± 90)	91 (2250 ± 90)	91 (1990 ± 80)	91 (1910 ± 160)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

(continued)

Stability Study for Group IV Compounds*
Cylinder No. IV-A12 (continued)

	COMPOUND					
Activity	**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
3rd Analysis Day ppb	302 (2496 ± 86)	302 (2720 ± 112)	302 (2350 ± 70)	302 (2245 ± 88)	302 (2000 ± 82)	302 (1900 ± 155)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
4th Analysis Day ppb	708 (1484 ± 116)	708 (2642 ± 244)	708 (2234 ± 159)	708 (2224 ± 188)	708 (2332 ± 186)	708 (1811 ± 244)
NBS Concen. ppb	(1440 ± 20)	(2400 ± 70)	(2130 ± 60)	(2220 ± 80)	(2290 ± 60)	(1900 ± 30)

*An NBS primary standard was used for calibration.

**First and second RTI analyses were performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study for Group IV Compounds*
Cylinder No. IV-A13

	COMPOUND					
Activity	**1,3-Butadiene**	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
			MANUFACTURER ANALYSIS			
THEORETICAL ppb	(1997)	(2002)	(3027)	(2017)	(3024)	(3028)
1st Analysis Date ppb	7/08/86 (1960)	7/08/86 (1546)	7/08/86 (2678)	7/08/86 (1998)	7/08/86 (3048)	7/08/86 (3257)
			RTI ANALYSIS**			
1st Analysis Date ppb	10/22/86 (2019 ± 80)	10/22/86 (1889 ± 120)	10/22/86 (3012 ± 125)	10/22/86 (1987 ± 90)	10/22/86 (2973 ± 125)	10/22/86 (3388 ± 270)
2nd Analysis Day*** ppb	91 (2020 ± 80)	91 (1760 ± 80)	91 (2770 ± 110)	91 (1910 ± 80)	91 (2940 ± 120)	91 (3480 ± 300)
3rd Analysis Day*** ppb	302 (2018 ± 79)	302 (1800 ± 82)	302 (2790 ± 112)	302 (1923 ± 81)	302 (2960 ± 123)	302 (3390 ± 289)
4th Analysis Day*** ppb	708 (2092 ± 145)	708 (1896 ± 143)	708 (2980 ± 193)	708 (2006 ± 131)	708 (2991 ± 288)	708 (2967 ± 397)
			RTI QUALITY CONTROL****			
1st Analysis Date ppb	10/22/86 (2942 ± 100)	10/22/86 (2878 ± 130)	10/22/86 (2338 ± 95)	10/22/86 (2214 ± 98)	10/22/86 (1996 ± 81)	10/22/86 (1975 ± 166)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day ppb	91 (2500 ± 90)	91 (2710 ± 110)	91 (2380 ± 90)	91 (2250 ± 90)	91 (1990 ± 80)	91 (1910 ± 160)
NBS Concen. ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

(continued)

Stability Study for Group IV Compounds*
Cylinder No. IV-A13 (continued)

Activity		COMPOUND					
		1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
3rd Analysis Day	ppb	302 (2496 ± 86)	302 (2720 ± 112)	302 (2350 ± 70)	302 (2245 ± 88)	302 2000 ± 82)	302 (1900 ± 155)
NBS Concen.	ppb	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
4th Analysis Day	ppb	708 (1484 ± 116)	708 (2642 ± 244)	708 (2234 ± 159)	708 (2224 ± 188)	708 (2332 ± 186)	708 (1811 ± 244)
NBS Concen.	ppb	(1440 ± 120)	(2400 ± 70)	(2130 ± 60)	(2220 ± 80)	(2290 ± 60)	(1900 ± 30)

*An NBS primary standard was used for calibration.

**First and second RTI analyses were performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

Stability Study for Group IV Compounds*
Cylinder No. IV-A14

Activity		COMPOUND					
		1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS							
THEORETICAL	ppb	(10)	(16)	(36)	(31)	(10)	(31)
1st Analysis Date		8/13/86	8/13/86	8/13/86	8/13/86	8/13/86	8/13/86
	ppb	(9.51)	(12.9)	(37.5)	(27.8)	(10.4)	(36.1)
RTI ANALYSIS**							
1st Analysis Date		5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
	ppb	(12.3 ± 0.8)	NA	NA	(30.9 ± 2.9)	(11.7 ± 0.8)	(31.0 ± 3.4)
2nd Analysis Day***		102	102	102	102	102	102
	ppb	(12.3 ± 0.8)	NA	(9.74 ± 2.3)	(27.6 ± 2.5)	(10.0 ± 0.7)	(34.2 ± 3.7)
3rd Analysis Day***		503	503	503	503	503	503
	ppb	(11.1 ± 0.9)	NA	NA	(31.8 ± 2.4)	(9.99 ± 1.4)	(36.8 ± 2.9)
RTI QUALITY CONTROL****							
1st Analysis Date		5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
	ppb	(20.0 ± 1.5)	NA	NA	(20.7 ± 1.9)	(20.5 ± 1.4)	(17.6 ± 1.9)
NBS Concen.	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day		102	102	102	102	102	102
	ppb	(20.5 ± 1.4)	NA	NA	(21.2 ± 2.0)	(20.0 ± 1.4)	(18.4 ± 2.0)
NBS Concen.	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day		503	503	503	503	503	503
	ppb	(9.57 ± 0.7)	NA	NA	(15.5 ± 1.7)	(12.8 ± 1.3)	(15.9 ± 1.2)
NBS Concen.	ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA ≑ Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A15

Activity	COMPOUND					
	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
			MANUFACTURER ANALYSIS			
THEORETICAL ppb	(10)	(20)	(20)	(10)	(10)	(10)
1st Analysis Date ppb	8/28/86 (10.3)	8/28/86 (14.5)	8/28/86 (17.8)	8/28/86 (12.6)	8/28/86 (8.22)	8/28/86 (8.84)
			RTI ANALYSIS**			
1st Analysis Date ppb	7/20/87 (12.3 ± 0.8)	7/20/87 NA	7/20/87 NA	7/20/87 (11.4 ± 1.1)	7/20/87 (9.95 ± 0.7)	7/20/87 (11.4 ± 1.3)
2nd Analysis Day*** ppb	28 (12.0 ± 0.8)	28 NA	28 NA	28 (10.4 ± 1.0)	28 (9.93 ± 0.7)	28 (11.2 ± 1.2)
3rd Analysis Day*** ppb	429 (11.5 ± 0.8)	429 NA	429 NA	429 (10.9 ± 1.1)	429 (9.04 ± 1.5)	429 (12.3 ± 1.3)
			RTI QUALITY CONTROL****			
1st Analysis Date ppb	7/20/87 (20.0 ± 1.4)	7/20/87 NA	7/20/87 NA	7/20/87 (20.0 ± 1.8)	7/20/87 (18.1 ± 1.3)	7/20/87 (18.2 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	28 (20.5 ± 1.4)	28 NA	28 NA	28 (21.2 ± 2.0)	28 (20.0 ± 1.4)	28 (18.4 ± 2.0)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	429 (9.57 ± 0.7)	429 NA	429 NA	429 (15.5 ± 1.7)	429 (12.9 ± 1.3)	429 (15.9 ± 1.2)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A16

Activity	COMPOUND					
	1,3-Butadiene	Ethylene oxide	Propylene oxide	Methylene chloride	Acrylonitrile	Ortho-xylene
MANUFACTURER ANALYSIS						
THEORETICAL ppb	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis Date ppb	9/16/86 (31.4)	9/16/86 (25.2)	9/16/86 (13.3)	9/16/86 (8.60)	9/16/86 (25.3)	9/16/86 (10.3)
RTI ANALYSIS**						
1st Analysis Date ppb	2/20/87 (29.4 ± 2.0)	2/20/87 NA	2/20/87 NA	2/20/87 (11.7 ± 1.1)	2/20/87 (20.6 ± 1.5)	2/20/87 (9.20 ± 1.0)
2nd Analysis Day*** ppb	171 NA	171 NA	171 NA	171 (11.2 ± 1.0)	171 NA	171 NA
3rd Analysis Day*** ppb	580 (34.6 ± 3.0)	580 NA	580 NA	580 (10.6 ± 0.9)	580 (27.0 ± 2.7)	580 (12.0 ± 0.8)
RTI QUALITY CONTROL****						
1st Analysis Date ppb	2/20/87 (18.6 ± 1.3)	2/20/87 NA	2/20/87 NA	2/20/87 (18.9 ± 1.7)	2/20/87 (19.1 ± 1.3)	2/20/87 (18.9 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day ppb	171 (19.9 ± 1.3)	171 NA	171 NA	171 (19.0 ± 1.8)	171 (18.6 ± 1.3)	171 (18.9 ± 2.1)
NBS Concen. ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day ppb	580 (9.57 ± 0.7)	580 NA	580 NA	580 (15.5 ± 1.7)	580 (12.8 ± 1.3)	580 (15.9 ± 1.2)
NBS Concen. ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group IV Compounds*
Cylinder No. IV-A17

Activity		COMPOUND					
		1,3-Butadiene	**Ethylene oxide**	**Propylene oxide**	**Methylene chloride**	**Acrylonitrile**	**Ortho-xylene**
				MANUFACTURER ANALYSIS			
THEORETICAL	ppb	(10)	(20)	(20)	(10)	(10)	(10)
1st Analysis Date		7/24/86	7/24/86	7/24/86	7/24/86	7/24/86	7/24/86
	ppb	(9.91)	(14.4)	(16.8)	(10.2)	(7.46)	(8.24)
				RTI ANALYSIS**			
1st Analysis Date		5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	ppb	(12.0 ± 0.8)	NA	NA	(10.9 ± 1.0)	(10.0 ± 0.7)	(11.9 ± 1.3)
2nd Analysis Day***		99	99	99	99	99	99
	ppb	(12.6 ± 0.9)	NA	NA	(10.7 ± 1.0)	(9.90 ± 0.7)	(11.2 ± 1.2)
3rd Analysis Day***		506	506	506	506	506	506
	ppb	(11.2 ± 1.2)	NA	NA	(10.1 ± 1.3)	(6.71 ± 0.7)	(10.8 ± 1.2)
				RTI QUALITY CONTROL****			
1st Analysis Date		5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	ppb	(21.8 ± 1.5)	NA	NA	(20.6 ± 1.9)	(18.8 ± 1.3)	(18.1 ± 2.0)
NBS Concen.	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day		99	99	99	99	99	99
	ppb	(19.5 ± 1.3)	NA	NA	(19.6 ± 1.8)	(19.1 ± 1.3)	(19.3 ± 2.1)
NBS Concen	ppb	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
3rd Analysis Day		506	506	506	506	506	506
	ppb	(9.58 ± 0.7)	NA	NA	(15.5 ± 1.1)	(12.4 ± 1.2)	(16.0 ± 1.2)
NBS Concen.	ppb	(9.20)	NA	NA	(16.0 ± 0.8)	(12.8 ± 1.0)	(14.8 ± 1.0)

*An NBS primary standard was used for calibration.

**First RTI analysis was performed using cryogenic preconcentration. Remainder of RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID

***Number of days after 1st RTI analysis

****A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not analyzed

Stability Study for Group V Compounds*
Cylinder V-A1

Activity		COMPOUND							
	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date ppb	2/19/87 (4.55)	2/19/87 (5.04)	12/23/86 (4.10)	2/19/87 (4.89)	2/19/87 (5.24)	2/19/87 (5.70)	2/19/87 (4.32)	2/19/87 (5.69)	2/19/87 (5.31)
2nd Analysis Date ppb	3/19/87 (4.12)	3/19/87 (5.13)	3/25/87 (3.80)	3/19/87 (4.99)	3/19/87 (5.47)	3/19/87 (6.07)	3/19/87 (4.52)	3/19/87 (5.80)	3/19/87 (3.99)
					RTI ANALYSIS**				
1st Analysis Date ppb	6/30/87 (5.15 ± 0.3)	6/30/87 (4.77 ± 0.3)	6/30/87 (4.90 ± 0.3)	6/30/87 (4.97 ± 0.6)	6/30/87 (4.87 ± 0.3)	6/30/87 (5.47 ± 0.3)	6/30/87 (4.08 ± 0.2)	6/30/87 (5.06 ± 0.4)	6/30/87 (5.84 ± 0.6)
2nd Analysis Day*** ppb	49 NA	49 (4.95 ± 0.3)	49 (4.67 ± 0.3)	49 (5.00 ± 0.6)	49 (4.90 ± 0.3)	49 (5.61 ± 0.4)	49 (4.18 ± 0.3)	49 (5.02 ± 0.3)	49 (5.02 ± 0.5)
3rd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
					RTI QUALITY CONTROL****				
1st Analysis Date ppb	6/30/87 (9.48 ± 0.6)	6/30/87 (10.6 ± 0.7)	6/30/87 (10.6 ± 0.7)	6/30/87 (10.6 ± 1.2)	6/30/87 (10.0 ± 0.6)	6/30/87 (10.4 ± 0.7)	6/30/87 (8.92 ± 0.5)	6/30/87 (9.89 ± 0.7)	6/30/87 NA
NBS Concen ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day ppb	49 NA	49 (10.7 ± 0.7)	49 (10.7 ± 0.7)	49 (10.6 ± 1.2)	49 (10.6 ± 0.6)	49 (10.4 ± 0.7)	49 (9.00 ± 0.5)	49 (9.93 ± 0.7)	49 NA
NBS Concen ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(12.2 ± 0.9)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A1 (continued)

Activity		Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
						COMPOUND				
						MANUFACTURER ANALYSIS				
THEORETICAL	ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date		2/19/87	12/23/86	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87
	ppb	(4.85)	(4.72)	(5.20)	(5.57)	(6.25)	(5.19)	(5.85)	(5.59)	(6.20)
2nd Analysis Date		3/19/87	3/25/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87
	ppb	(4.78)	(4.69)	(5.12)	(5.73)	(6.18)	(5.41)	(5.98)	(5.57)	(5.91)
						RTI ANALYSIS**				
1st Analysis Date		6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	ppb	(5.32 ± 0.6)	(5.23 ± 0.6)	(4.81 ± 0.3)	(4.87 ± 0.3)	(4.79 ± 0.3)	(4.74 ± 0.3)	(4.89 ± 0.3)	(4.46 ± 0.3)	(5.02 ± 0.3)
2nd Analysis Day***		49	49	49	49	49	49	49	49	49
	ppb	(5.42 ± 0.6)	(4.92 ± 0.5)	(4.67 ± 0.3)	(4.81 ± 0.3)	(4.84 ± 0.4)	(4.60 ± 0.3)	(4.91 ± 0.3)	(4.81 ± 0.3)	(5.10 ± 0.3)
3rd Analysis Day***	ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
						RTI QUALITY CONTROL****				
1st Analysis Date		6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	ppb	(9.72 ± 1.0)	(8.70 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.98 ± 0.6)	(9.58 ± 0.6)	(9.56 ± 0.5)	(9.65 ± 0.5)
NBS Concen	ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day		49	49	49	49	49	49	49	49	49
	ppb	(9.68 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.4 ± 0.6)	(9.48 ± 0.6)	(10.0 ± 0.6)	(9.62 ± 0.6)	(9.63 ± 0.5)	(9.72 ± 0.5)
NBS Concen	ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.

**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis

****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis

NA = Not analyzed

Stability Study for Group V Compounds
Cylinder V-A2

Activity	COMPOUND								
	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS									
THEORETICAL									
ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date	2/23/87	2/23/87	12/23/86	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87
ppb	(4.46)	(5.29)	(4.47)	(5.12)	(5.35)	(5.89)	(4.54)	(5.51)	(5.16)
2nd Analysis Date	3/23/87	3/23/87	3/25/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87
ppb	(5.08)	(5.10)	(4.21)	(5.19)	(5.71)	(5.52)	(4.76)	(5.81)	(5.64)
RTI ANALYSIS**									
1st Analysis Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
ppb	(5.13 ± 0.3)	(4.95 ± 0.3)	(4.72 ± 0.3)	(5.10 ± 0.6)	(5.16 ± 0.3)	(5.85 ± 0.4)	(4.14 ± 0.2)	(5.22 ± 0.4)	(5.53 ± 0.6)
2nd Analysis Day***	49	49	49	49	49	49	49	49	49
ppb	(5.28 ± 0.3)	(5.10 ± 0.3)	(5.00 ± 0.3)	(5.16 ± 0.6)	(5.21 ± 0.3)	(5.83 ± 0.4)	(4.23 ± 0.3)	(5.21 ± 0.4)	(5.75 ± 0.6)
3rd Analysis Day***	479	479	479	479	479	479	479	479	479
ppb	(5.09 ± 0.3)	(4.94 ± 0.3)	(4.86 ± 0.3)	(4.28 ± 0.5)	(5.26 ± 0.4)	(5.97 ± 0.3)	(4.50 ± 0.3)	(5.34 ± 0.3)	NA
RTI QUALITY CONTROL****									
1st Analysis Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
ppb	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± 0.7)	NA
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day	49	49	49	49	49	49	49	49	49
ppb	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(9.95 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
3rd Analysis Day	479	479	479	479	479	479	479	479	479
ppb	(4.70 ± 0.5)	(5.17 ± 0.4)	(5.10 ± 0.9)	(4.77 ± 0.8)	(4.86 ± 0.5)	(5.24 ± 0.4)	(5.34 ± 0.4)	(5.47 ± 0.4)	NA
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	(6.70)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A2 (continued)

	COMPOUND								
Activity	Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date ppb	2/23/87 (5.46)	12/23/86 (4.49)	2/23/87 (5.08)	2/23/87 (5.52)	2/23/87 (6.24)	2/23/87 (5.14)	2/23/87 (5.74)	2/23/87 (5.24)	2/23/87 (5.58)
2nd Analysis Date ppb	3/23/87 (5.64)	3/25/87 (4.75)	3/23/87 (5.86)	3/23/87 (5.43)	3/23/87 (6.17)	3/23/87 (5.48)	3/23/87 (6.08)	3/23/87 (5.60)	3/23/87 (6.00)
					RTI ANALYSIS**				
1st Analysis Date ppb	6/30/87 (5.68 ± 0.6)	6/30/87 (4.44 ± 0.5)	6/30/87 (5.10 ± 0.3)	6/30/87 (5.24 ± 0.3)	6/30/87 (5.24 ± 0.3)	6/30/87 (5.01 ± 0.3)	6/30/87 (5.20 ± 0.3)	6/30/87 (4.66 ± 0.3)	6/30/87 (5.25 ± 0.3)
2nd Analysis Day*** ppb	49 (5.73 ± 0.6)	49 (4.86 ± 0.6)	49 (5.20 ± 0.3)	49 (5.30 ± 0.3)	49 (5.16 ± 0.3)	49 (5.07 ± 0.3)	49 (5.20 ± 0.3)	49 (4.79 ± 0.3)	49 (5.10 ± 0.3)
3rd Analysis Day*** ppb	479 (5.59 ± 0.5)	479 (5.00 ± 0.6)+	479 (5.20 ± 0.3)	479 (5.33 ± 0.3)	479 (5.10 ± 0.5)	479 (5.17 ± 0.3)	479 (5.33 ± 0.4)	479 (4.87 ± 0.4)	479 (4.70 ± 0.4)
					RTI QUALITY CONTROL****				
1st Analysis Date ppb	6/30/87 (9.72 ± 1.0)	6/30/87 (8.70 ± 1.0)	6/30/87 (10.1 ± 0.6)	6/30/87 (10.5 ± 0.6)	6/30/87 (9.52 ± 0.6)	6/30/87 (9.98 ± 0.6)	6/30/87 (9.58 ± 0.6)	6/30/87 (9.56 ± 0.5)	6/30/87 (9.65 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day ppb	49 (9.68 ± 1.0)	49 (8.65 ± 1.0)	49 (10.1 ± 0.6)	49 (10.4 ± 0.6)	49 (9.48 ± 0.6)	49 (10.0 ± 0.6)	49 (9.62 ± 0.6)	49 (9.63 ± 0.5)	49 (9.72 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.9 ± 0.5)
3rd Analysis Day ppb	479 (4.85 ± 0.5)	479 (6.67 ± 0.8)+	479 (5.49 ± 0.3)	479 (5.44 ± 0.3)	479 (5.31 ± 0.5)	479 (5.49 ± 0.3)	479 (5.81 ± 0.4)	479 (5.59 ± 0.4)	479 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*Calibration was performed using an NBS primary standard.
**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis.
****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
+ = ECD analysis data.

NA = Not analyzed.

Stability Study for Group V Compounds*
Cylinder V-A3

	COMPOUND								
Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date ppb	2/17/87 (4.91)	2/17/87 (5.12)	1/27/87 (4.36)	2/17/87 (5.38)	2/17/87 (5.39)	2/17/87 (5.34)	2/17/87 (5.13)	2/17/87 (5.75)	2/17/87 (5.77)
2nd Analysis Date ppb	3/17/87 (5.21)	3/17/87 (4.61)	3/25/87 (4.01)	3/17/87 (4.91)	3/17/87 (4.72)	3/17/87 (4.80)	3/17/87 (4.84)	3/17/87 (4.71)	3/17/87 (5.85)
					RTI ANALYSIS**				
1st Analysis Date ppb	7/01/87 (4.98 ± 0.3)	7/01/87 (4.92 ± 0.3)	7/01/87 (4.96 ± 0.3)	7/01/87 (5.21 ± 0.6)	7/01/87 (5.03 ± 0.3)	7/01/87 (5.44 ± 0.3)	7/01/87 (4.78 ± 0.3)	7/01/87 (5.16 ± 0.4)	7/01/87 (6.00 ± 0.7)
2nd Analysis Day*** ppb	50 (5.33 ± 0.3)	50 (4.85 ± 0.3)	50 (4.99 ± 0.3)	50 (5.12 ± 0.6)	50 (4.86 ± 0.3)	50 (5.47 ± 0.3)	50 (4.88 ± 0.3)	50 (5.13 ± 0.4)	50 NA
3rd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
					RTI QUALITY CONTROL****				
1st Analysis Date ppb	7/01/87 (9.40 ± 0.6)	7/01/87 (10.5 ± 0.8)	7/01/87 (10.4 ± 0.7)	7/01/87 (10.6 ± 1.2)	7/01/87 (10.2 ± 0.6)	7/01/87 (10.5 ± 0.7)	7/01/87 (8.96 ± 0.5)	7/01/87 (10.1 ± 0.7)	7/01/87 NA
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day ppb	50 (9.45 ± 0.6)	50 (10.6 ± 0.7)	50 (10.5 ± 0.7)	50 (10.6 ± 1.2)	50 (9.94 ± 0.6)	50 (10.0 ± 0.7)	50 (9.03 ± 0.5)	50 (9.85 ± 0.7)	50 (8.40 ± 0.9)
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A3 (continued)

	COMPOUND								
Activity	Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis Date ppb	2/17/87 (9.41)	1/27/87 (9.41)	2/17/87 (10.9)	2/17/87 (11.6)	2/17/87 (12.8)	2/17/87 (10.2)	2/17/87 (12.0)	2/17/87 (11.1)	2/17/87 (14.3)
2nd Analysis Date ppb	3/17/87 (9.47)	3/25/87 (10.8)	3/17/87 (11.2)	3/17/87 (10.5)	3/17/87 (10.4)	3/17/87 (8.80)	3/17/87 (9.39)	3/17/87 (9.35)	3/17/87 (11.6)
RTI ANALYSIS**									
1st Analysis Date ppb	7/01/87 (9.74 ± 1.0)	7/01/87 (9.43 ± 1.0)	7/01/87 (10.3 ± 0.6)	7/01/87 (10.6 ± 0.6)	7/01/87 (10.4 ± 0.6)	7/01/87 (9.34 ± 0.5)	7/01/87 (10.1 ± 0.6)	7/01/87 (9.40 ± 0.5)	7/01/87 (12.3 ± 0.7)
2nd Analysis Day*** ppb	50 NA	50 (9.62 ± 1.1)	50 (10.0 ± 0.6)	50 (10.3 ± 0.6)	50 (10.2 ± 0.6)	50 (9.25 ± 0.5)	50 (9.92 ± 0.6)	50 (9.56 ± 0.5)	50 (12.0 ± 0.7)
3rd Analysis Day*** ppb	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL****									
1st Analysis Date ppb	7/01/87 (9.80 ± 1.0)	7/01/87 (8.65 ± 1.0)	7/01/87 (10.1 ± 0.6)	7/01/87 (10.6 ± 0.6)	7/01/87 (9.92 ± 0.6)	7/01/87 (10.0 ± 0.6)	7/01/87 (9.73 ± 0.6)	7/01/87 (9.80 ± 0.5)	7/01/87 (10.0 ± 0.6)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.8 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day ppb	50 (9.73 ± 1.0)	50 (8.80 ± 1.0)	50 (10.1 ± 0.6)	50 (10.5 ± 0.6)	50 (9.61 ± 0.6)	50 (10.0 ± 0.6)	50 (9.66 ± 0.6)	50 (9.59 ± 0.5)	50 (9.83 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.

**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group V Compounds*
Cylinder V-A4

Activity	COMPOUND								
	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS									
THEORETICAL									
ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date	2/13/87	2/13/87	1/27/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87
ppb	(4.91)	(4.85)	(4.27)	(5.15)	(5.16)	(5.12)	(4.98)	(5.15)	(5.60)
2nd Analysis Date	3/16/87	3/16/87	3/25/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87
ppb	(5.16)	(4.48)	(4.32)	(4.99)	(4.95)	(4.94)	(4.92)	(4.67)	(5.65)
RTI ANALYSIS**									
1st Analysis Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
ppb	(5.08 ± 0.3)	(4.86 ± 0.3)	(4.60 ± 0.3)	(5.13 ± 0.6)	(5.10 ± 0.3)	(5.39 ± 0.3)	(4.66 ± 0.3)	(5.21 ± 0.4)	(5.52 ± 0.6)
2nd Analysis Day***	49	49	49	49	49	49	49	49	49
ppb	(4.93 ± 0.3)	(4.76 ± 0.3)	(4.88 ± 0.3)	(5.18 ± 0.6)	(5.00 ± 0.3)	(5.40 ± 0.3)	(4.72 ± 0.3)	(5.22 ± 0.4)	NA
3rd Analysis Day***	empty	empty	empty	empty	empty	empty	empty	empty	empty
RTI QUALITY CONTROL****									
1st Analysis Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
ppb	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± 0.7)	NA
NBS Concentration									
ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(11.0 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day	49	49	49	49	49	49	49	49	49
ppb	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(9.95 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concentration									
ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A4 (continued)

	COMPOUND								
Activity	Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis Date ppb	2/13/87 (8.99)	1/27/87 (9.39)	2/13/87 (10.1)	2/13/87 (11.0)	2/13/87 (11.1)	2/13/87 (9.57)	2/13/87 (10.7)	2/13/87 (9.60)	2/13/87 (11.7)
2nd Analysis Date ppb	3/16/87 (8.81)	3/25/87 (11.0)	3/16/87 (10.8)	3/16/87 (10.6)	3/16/87 (11.0)	3/16/87 (9.10)	3/16/87 (9.97)	3/16/87 (9.69)	3/16/87 (12.0)
RTI ANALYSIS**									
1st Analysis Date ppb	6/30/87 (8.72 ± 0.9)	6/30/87 (8.90 ± 1.0)	6/30/87 (10.1 ± 0.6)	6/30/87 (10.5 ± 0.6)	6/30/87 (9.88 ± 0.6)	6/30/87 (9.34 ± 0.5)	6/30/87 (9.95 ± 0.6)	6/30/87 (9.06 ± 0.5)	6/30/87 (11.6 ± 0.7)
2nd Analysis Day*** ppb	49 (8.36 ± 0.9)	49 (9.13 ± 1.0)	49 (10.1 ± 0.6)	49 (10.5 ± 0.6)	49 (9.52 ± 0.6)	49 (9.62 ± 0.5)	49 (10.0 ± 0.6)	49 (9.78 ± 0.5)	49 (11.8 ± 0.7)
3rd Analysis Day***	empty	empty	empty	empty	empty	empty	empty	empty	empty
RTI QUALITY CONTROL****									
1st Analysis Date ppb	6/30/87 (9.72 ± 1.0)	6/30/87 (8.70 ± 1.0)	6/30/87 (10.1 ± 0.6)	6/30/87 (10.5 ± 0.6)	6/30/87 (9.52 ± 0.6)	6/30/87 (9.98 ± 0.6)	6/30/87 (9.58 ± 0.6)	6/30/87 (9.56 ± 0.5)	6/30/87 (9.65 ± 0.5)
NBS Concentration ppb	(10.6 ± 1.0)	(9.40 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day ppb	49 (9.68 ± 1.0)	49 (8.65 ± 1.0)	49 (10.1 ± 0.6)	49 (10.4 ± 0.6)	49 (9.48 ± 0.6)	49 (10.0 ± 0.6)	49 (9.62 ± 0.6)	49 (9.63 ± 0.5)	49 (9.72 ± 0.5)
NBS Concentration ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis.
****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

NA = Not analyzed.

Stability Study for Group V Compounds*
Cylinder V-A5

Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
					COMPOUND				
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis Date ppb	2/18/87 (9.98)	2/18/87 (10.8)	12/23/86 (9.98)	2/18/87 (10.5)	2/18/87 (11.2)	2/18/87 (11.4)	2/18/87 (9.93)	2/18/87 (11.4)	2/18/87 (10.7)
2nd Analysis Date ppb	3/18/87 (10.3)	3/18/87 (11.1)	3/24/87 (9.47)	3/18/87 (10.6)	3/18/87 (11.4)	3/18/87 (11.6)	3/18/87 (10.3)	3/18/87 (11.7)	3/18/87 (10.9)
					RTI ANALYSIS**				
1st Analysis Date ppb	6/30/87 (10.2 ± 0.6)	6/30/87 (10.2 ± 0.7)	6/30/87 (10.0 ± 0.6)	6/30/87 (11.1 ± 1.3)	6/30/87 (10.5 ± 0.6)	6/30/87 (11.0 ± 0.7)	6/30/87 (9.24 ± 0.5)	6/30/87 (10.6 ± 0.8)	6/30/87 (10.6 ± 1.2)
2nd Analysis Day*** ppb	49 NA	49 (10.6 ± 0.7)	49 (9.94 ± 0.6)	49 (10.8 ± 1.2)	49 (9.90 ± 0.6)	49 (10.8 ± 0.7)	49 (9.23 ± 0.5)	49 (10.5 ± 0.8)	49 NA
3rd Analysis Day*** ppb	479 (10.2 ± 0.7)	479 (10.4 ± 0.7)	479 (10.5 ± 0.6)	479 (8.69 ± 0.8)	479 (10.5 ± 0.8)	479 (11.2 ± 0.9)	479 (9.93 ± 0.6)	479 (10.8 ± 0.6)	479 NA
					RTI QUALITY CONTROL****				
1st Analysis Date ppb	6/30/87 (9.48 ± 0.6)	6/30/87 (10.6 ± 0.7)	6/30/87 (10.6 ± 0.7)	6/30/87 (10.6 ± 1.2)	6/30/87 (10.0 ± 0.6)	6/30/87 (10.4 ± 0.7)	6/30/87 (8.92 ± 0.5)	6/30/87 (9.89 ± 0.7)	6/30/87 NA
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(11.0 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day ppb	49 NA	49 (10.7 ± 0.7)	49 (10.7 ± 0.7)	49 (10.6 ± 1.2)	49 (9.95 ± 0.6)	49 (10.4 ± 0.7)	49 (9.00 ± 0.5)	49 (9.93 ± 0.7)	49 NA
NBS Concen ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
3rd Analysis Day ppb	479 (4.70 ± 0.5)	479 (5.17 ± 0.4)	479 (5.10 ± 0.9)	479 (4.77 ± 0.8)	479 (4.86 ± 0.5)	479 (5.24 ± 0.4)	479 (5.34 ± 0.4)	479 (5.47 ± 0.4)	479 NA
NBS Concen ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	(6.70)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A5 (continued)

Activity	Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
					COMPOUND				
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date ppb	2/18/87 (4.84)	12/23/86 (5.31)	2/18/87 (5.38)	2/18/87 (5.84)	2/18/87 (6.37)	2/18/87 (5.39)	2/18/87 (5.96)	2/18/87 (5.52)	2/18/87 (5.79)
2nd Analysis Date ppb	3/18/87 (4.87)	3/24/87 (5.04)	3/18/87 (5.68)	3/18/87 (5.99)	3/18/87 (6.45)	3/18/87 (5.57)	3/18/87 (6.22)	3/18/87 (5.86)	3/18/87 (6.18)
					RTI ANALYSIS**				
1st Analysis Date ppb	6/30/87 (5.08 ± 0.5)	6/30/87 (5.18 ± 0.6)	6/30/87 (5.25 ± 0.3)	6/30/87 (5.51 ± 0.3)	6/30/87 (5.48 ± 0.3)	6/30/87 (5.38 ± 0.3)	6/30/87 (5.44 ± 0.3)	6/30/87 (5.14 ± 0.3)	6/30/87 (5.78 ± 0.3)
2nd Analysis Day*** ppb	49 (4.96 ± 0.5)	49 (5.26 ± 0.6)	49 (5.12 ± 0.3)	49 (5.40 ± 0.3)	49 (5.50 ± 0.3)	49 (5.24 ± 0.3)	49 (5.50 ± 0.3)	49 (5.21 ± 0.3)	49 (5.48 ± 0.3)
3rd Analysis Day*** ppb	479 (5.08 ± 0.5)	479 (5.49 ± 0.7)+	479 (5.30 ± 0.3)	479 (5.53 ± 0.3)	479 (5.41 ± 0.6)	479 (5.36 ± 0.3)	479 (5.49 ± 0.4)	479 (5.15 ± 0.4)	479 (4.88 ± 0.3)
					RTI QUALITY CONTROL****				
1st Analysis Date ppb	6/30/87 (9.72 ± 1.0)	6/30/87 (8.70 ± 1.0)	6/30/87 (10.1 ± 0.6)	6/30/87 (10.5 ± 0.6)	6/30/87 (9.52 ± 0.6)	6/30/87 (9.98 ± 0.6)	6/30/87 (9.58 ± 0.6)	6/30/87 (9.56 ± 0.5)	6/30/87 (9.65 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day ppb	49 (9.68 ± 1.0)	49 (8.65 ± 1.0)	49 (10.1 ± 0.6)	49 (10.4 ± 0.6)	49 (9.48 ± 0.6)	49 (10.0 ± 0.6)	49 (9.62 ± 0.6)	49 (9.63 ± 0.5)	49 (9.72 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
3rd Analysis Day ppb	479 (4.85 ± 0.5)	479 (6.67 ± 0.8)+	479 (5.49 ± 0.3)	479 (5.44 ± 0.3)	479 (5.31 ± 0.5)	479 (5.49 ± 0.3)	479 (5.81 ± 0.4)	479 (5.59 ± 0.4)	479 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

NA = Not analyzed.

*Calibration was performed using an NBS primary standard.

**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

+ = ECD analysis data.

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Cylinder V-A6

Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetra-chloro-ethylene	1,3-Butadiene
					COMPOUND				
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis Date ppb	2/17/87 (9.66)	2/17/87 (10.5)	12/23/86 (9.83)	2/17/87 (10.2)	2/17/87 (10.8)	2/17/87 (11.1)	2/17/87 (9.74)	2/17/87 (11.5)	2/17/87 (11.8)
2nd Analysis Date ppb	3/24/87 (10.3)	3/24/87 (10.6)	3/24/87 (9.31)	3/24/87 (10.3)	3/24/87 (10.8)	3/24/87 (11.0)	3/24/87 (9.78)	3/24/87 (10.8)	3/24/87 (12.4)
					RTI ANALYSIS**				
1st Analysis Date ppb	7/01/87 (9.71 ± 0.6)	7/01/87 (10.2 ± 0.7)	7/01/87 (9.73 ± 0.6)	7/01/87 (10.1 ± 1.2)	7/01/87 (10.1 ± 0.6)	7/01/87 (10.7 ± 0.7)	7/01/87 (9.00 ± 0.5)	7/01/87 (10.2 ± 0.7)	7/01/87 (10.5 ± 1.1)
2nd Analysis Day*** ppb	50 (9.80 ± 0.6)	50 (10.5 ± 0.7)	50 (10.0 ± 0.6)	50 (10.3 ± 1.2)	50 (9.84 ± 0.6)	50 (10.6 ± 0.7)	50 (9.27 ± 0.5)	50 (10.1 ± 0.7)	50 (10.1 ± 1.1)
3rd Analysis Day*** ppb	477 (10.0 ± 0.7)	477 (10.0 ± 0.7)	477 (9.96 ± 0.8)	477 (8.39 ± 0.7)	477 (10.2 ± 0.8)	477 (10.9 ± 0.8)	477 (9.56 ± 0.6)	477 (10.3 ± 0.7)	477 NA
					RTI QUALITY CONTROL***				
1st Analysis Date ppb	7/01/87 (9.40 ± 0.6)	7/01/87 (10.5 ± 0.8)	7/01/87 (10.4 ± 0.7)	7/01/87 (10.6 ± 1.2)	7/01/87 (10.2 ± 0.6)	7/01/87 (10.5 ± 0.7)	7/01/87 (8.96 ± 0.5)	7/01/87 (10.1 ± 0.7)	7/01/87 NA
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis Day ppb	50 (9.45 ± 0.6)	50 (10.6 ± 0.7)	50 (10.5 ± 0.7)	50 (10.6 ± 1.2)	50 (9.94 ± 0.6)	50 (10.4 ± 0.7)	50 (9.03 ± 0.5)	50 (9.85 ± 0.7)	50 (8.40 ± 0.9)
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
3rd Analysis Day ppb	477 (4.70 ± 0.5)	477 (5.17 ± 0.4)	477 (5.10 ± 0.9)	477 (4.77 ± 0.8)	477 (4.86 ± 0.5)	477 (5.24 ± 0.4)	477 (5.34 ± 0.4)	477 (5.47 ± 0.4)	477 NA
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	(6.70)

(continued)

Stability Study for Group V Compounds*
Cylinder V-A6 (continued)

Activity	Bromo-methane	Trichloro-fluoro-methane	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis Date ppb	2/17/87 (5.57)	12/23/86 (4.45)	2/17/87 (5.18)	2/17/87 (5.82)	2/17/87 (6.10)	2/17/87 (5.28)	2/17/87 (5.52)	2/17/87 (5.53)	2/17/87 (6.18)
2nd Analysis Date ppb	3/24/87 (5.77)	3/24/87 (4.30)	3/24/87 (5.38)	3/24/87 (5.65)	3/24/87 (5.99)	3/24/87 (5.24)	3/24/87 (5.68)	3/24/87 (5.34)	3/24/87 (5.50)
RTI ANALYSIS**									
1st Analysis Date ppb	7/01/87 (5.70 ± 0.6)	7/01/87 (4.70 ± 0.5)	7/01/87 (5.10 ± 0.3)	7/01/87 (5.32 ± 0.3)	7/01/87 (5.27 ± 0.3)	7/01/87 (5.06 ± 0.3)	7/01/87 (5.14 ± 0.3)	7/01/87 (4.97 ± 0.3)	7/01/87 (5.23 ± 0.3)
2nd Analysis Day*** ppb	50 (5.60 ± 0.6)	50 (4.80 ± 0.5)	50 (5.17 ± 0.3)	50 (5.20 ± 0.3)	50 (5.10 ± 0.3)	50 (4.96 ± 0.3)	50 (5.18 ± 0.3)	50 (4.80 ± 0.3)	50 (5.21 ± 0.3)
3rd Analysis Day*** ppb	477 (6.11 ± 0.6)	477 (4.67 ± 0.7)+	477 (5.16 ± 0.3)	477 (5.37 ± 0.3)	477 (5.26 ± 0.3)	477 (5.15 ± 0.3)	477 (5.21 ± 0.4)	477 (4.92 ± 0.3)	477 (4.61 ± 0.3)
RTI QUALITY CONTROL******									
1st Analysis Date ppb	7/01/87 (9.80 ± 1.0)	7/01/87 (8.65 ± 1.0)	7/01/87 (10.1 ± 0.6)	7/01/87 (10.6 ± 0.6)	7/01/87 (9.92 ± 0.6)	7/01/87 (10.0 ± 0.6)	7/01/87 (9.73 ± 0.6)	7/01/87 (9.80 ± 0.5)	7/01/87 (10.0 ± 0.5)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis Day ppb	50 (9.73 ± 1.0)	50 (8.80 ± 1.0)	50 (10.1 ± 0.6)	50 (10.5 ± 0.6)	50 (9.61 ± 0.6)	50 (10.0 ± 0.6)	50 (9.66 ± 0.6)	50 (9.59 ± 0.5)	50 (9.83 ± 0.6)
NBS Concen. ppb	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
3rd Analysis Day ppb	477 (4.85 ± 0.5)	477 (6.67 ± 0.8)+	477 (5.49 ± 0.3)	477 (5.44 ± 0.3)	477 (5.31 ± 0.5)	477 (5.49 ± 0.3)	477 (5.81 ± 0.4)	477 (5.59 ± 0.4)	477 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

NA = Not analyzed.

*Calibration was performed using an NBS primary standard.

**All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

***Number of days after 1st RTI analysis.

****A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

+ = ECD analysis data.

Stability Study for Group V Compounds
Cylinder No. V-A7

	COMPOUND								
Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
	MANUFACTURER ANALYSIS								
THEORETICAL ppb	(11.0)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.3)	(11.0)
1st Analysis Date ppb	10/27/87 (11.4)	10/27/87 (11.1)	10/27/87 (11.5)	10/27/87 (11.2)	10/27/87 (13.0)	10/27/87 (12.1)	10/27/87 (12.9)	10/27/87 (13.6)	10/27/87 (13.5)
2nd Analysis Date ppb	12/1/87 (11.2)	12/1/87 (12.1)	12/1/87 (10.6)	12/1/87 (12.2)	12/1/87 (12.4)	12/1/87 (13.6)	12/1/87 (12.3)	12/1/87 (13.2)	12/1/87 (12.4)
	RTI ANALYSIS*								
1st Analysis Date ppb	3/29/88 (10.9 ± 1.7)	3/29/88 (11.7 ± 0.9)	3/29/88 (11.7 ± 1.3)	3/29/88 (12.0 ± 1.2)	3/29/88 (11.[illegible] ± 0.9)	3/29/88 (12.1 ± 0.9)	3/29/88 (12.0 ± 2.3)	3/29/88 (11.3 ± 0.9)	3/29/88 NC
2nd Analysis Day** ppb	143 (11.1 ± 1.2)	143 (11.4 ± 1.0)	143 (11.5 ± 1.1)	143 (10.6 ± 1.0)	143 (11.4 ± 1.0)	143 (12.0 ± 0.9)	143 (11.7 ± 1.1)	143 (12.0 ± 0.8)	143 NC
3rd Analysis Day** ppb	207 (11.0 ± 0.7)	207 (11.4 ± 0.7)	207 (11.3 ± 0.7)	207 (9.96 ± 0.9)	207 (11.8 ± 0.9)	207 (12.0 ± 0.7)	207 (11.8 ± 0.7)	207 (11.9 ± 0.8)	207 NC
	RTI QUALITY CONTROL***								
1st Analysis Date ppb	3/29/88 (9.82 ± 3.4)	3/29/88 (11.8 ± 0.8)	3/29/88 (10.9 ± 1.5)	3/29/88 (10.8 ± 1.4)	3/29/88 (10.2 ± 1.1)	3/29/88 (10.8 ± 1.0)	3/29/88 (9.46 ± 1.4)	3/29/88 (9.33 ± 1.2)	3/29/88
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	143 (4.66 ± 0.4)	143 (5.02 ± 0.4)	143 (4.64 ± 0.5)	143 (4.71 ± 0.5)	143 (4.61 ± 0.4)	143 (5.19 ± 0.4)	143 (5.08 ± 0.4)	143 (5.20 ± 0.4)	143 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.5)	NC
3rd Analysis Day ppb	207 (4.70 ± 0.5)	207 (5.17 ± 0.4)	207 (5.10 ± 0.9)	207 (4.77 ± 0.8)	207 (4.86 ± 0.5)	207 (5.42 ± 0.4)	207 (5.34 ± 0.4)	207 (5.47 ± 0.4)	207 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A7 (continued)

		COMPOUND							
Activity	Bromo-methane	Trichloro-fluoro-methane (freon-11)	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	Ortho-xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(4.00)	(4.00)	(4.10)	(4.10)	(4.12)	(4.10)	(4.11)	(4.22)	(4.14)
1st Analysis Date ppb	10/27/87 (3.62)	10/27/87 (3.39)	10/27/87 (5.02)	10/27/87 (4.43)	10/27/87 (4.49)	10/27/87 (4.90)	10/27/87 (4.75)	10/27/87 (4.52)	10/27/87 (5.28)
2nd Analysis Date ppb	12/1/87 (3.31)	12/1/87 (3.78)	12/1/87 (3.87)	12/1/87 (4.72)	12/1/87 (4.73)	12/1/87 (4.65)	12/1/87 (4.87)	12/1/87 (4.72)	12/1/87 (4.90)
RTI ANALYSIS*									
1st Analysis Date ppb	3/29/88 (3.96 ± 0.6)	3/29/88 (3.68 ± 0.8)****	3/29/88 (4.24 ± 0.3)	3/29/88 (4.26 ± 0.3)	3/29/88 (4.34 ± 0.3)	3/29/88 (4.45 ± 0.3)	3/29/88 (4.31 ± 0.3)	3/29/88 (4.21 ± 0.3)	3/29/88 (4.34 ± 0.6)
2nd Analysis Day** ppb	143 (4.06 ± 0.5)	143 (3.60 ± 0.6)****	143 (4.29 ± 0.3)	143 (4.25 ± 0.3)	143 (4.27 ± 0.4)	143 (4.43 ± 0.3)	143 (4.40 ± 0.3)	143 (4.14 ± 0.3)	143 (4.45 ± 0.4)
3rd Analysis Day** ppb	207 (4.09 ± 0.4)	207 (3.88 ± 0.4)****	207 (4.32 ± 0.3)	207 (4.29 ± 0.3)	207 (4.36 ± 0.3)	207 (4.46 ± 0.3)	207 (4.47 ± 0.3)	207 (4.18 ± 0.3)	207 (4.23 ± 0.3)
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/29/88 (10.1 ± 0.7)	3/29/88 (9.38 ± 3.8)****	3/29/88 (10.3 ± 1.1)	3/29/88 (10.8 ± 1.0)	3/29/88 (10.6 ± 1.7)	3/29/88 (10.4 ± 1.0)	3/29/88 (10.4 ± 0.6)	3/29/88 (10.9 ± 0.8)	3/29/88 (10.5 ± 1.8)
NBS Concen. ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4)	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.2 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day ppb	143 (4.77 ± 0.5)	143 (6.41 ± 1.0)****	143 (5.39 ± 0.3)	143 (5.32 ± 0.4)	143 (4.99 ± 0.4)	143 (5.32 ± 0.4)	143 (5.44 ± 0.5)	143 (5.28 ± 0.4)	143 (4.78 ± 0.4)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day ppb	207 (4.85 ± 0.5)	207 (6.67 ± 0.8)****	207 (5.49 ± 0.3)	207 (5.44 ± 0.3)	207 (5.31 ± 0.5)	207 (5.49 ± 0.3)	207 (5.81 ± 0.4)	207 (5.59 ± 0.4)	207 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*An NBS primary standard cylinder was used for calibration.

**Number of days after 1st RTI analysis

***A different NBS primary standard cylinder was used for quality control.

****ECD analysis data.

NC = Not calculated due to stability problems.

Stability Study for Group V Compounds
Cylinder No. V-A8

Activity				COMPOUND					
	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
				MANUFACTURER ANALYSIS					
THEORETICAL ppb	(4.00)	(4.07)	(4.08)	(4.05)	(4.08)	(4.07)	(4.06)	(4.07)	(4.00)
1st Analysis Date ppb	10/23/87 (4.10)	10/23/87 (4.00)	10/23/87 (3.94)	10/23/87 (4.30)	10/23/87 (4.36)	10/23/87 (4.81)	10/23/87 (4.15)	10/23/87 (4.82)	10/23/87 (5.28)
2nd Analysis Date ppb	11/23/87 (4.17)	11/23/87 (3.77)	11/23/87 (3.91)	11/23/87 (4.06)	11/23/87 (4.20)	11/23/87 (4.16)	11/23/87 (4.12)	11/23/87 (4.51)	11/23/87 (5.27)
				RTI ANALYSIS*					
1st Analysis Date ppb	3/29/88 (4.26 ± 0.7)	3/29/88 (4.11 ± 0.4)	3/29/88 (4.06 ± 0.4)	3/29/88 (4.19 ± 0.5)	3/29/88 (4.09 ± 0.3)	3/29/88 (4.30 ± 0.3)	3/29/88 (4.40 ± 1.0)	3/29/88 (4.47 ± 0.6)	3/29/88 NC
2nd Analysis Day** ppb	142 (4.19 ± 0.4)	142 (3.83 ± 0.3)	142 (3.81 ± 0.4)	142 (3.55 ± 0.4)	142 (4.09 ± 0.4)	142 (4.20 ± 0.4)	142 (4.12 ± 0.3)	142 (4.23 ± 0.4)	142 NC
3rd Analysis Day** ppb	206 (4.17 ± 0.3)	206 (4.00 ± 0.3)	206 (3.93 ± 0.3)	206 (3.47 ± 0.4)	206 (4.23 ± 0.3)	206 (4.40 ± 0.3)	206 (4.30 ± 0.3)	206 (4.48 ± 0.3)	206 NC
				RTI QUALITY CONTROL***					
1st Analysis Date ppb	3/29/88 (9.74 ± 0.8)	3/29/88 (10.7 ± 1.1)	3/29/88 (10.9 ± 1.5)	3/29/88 (10.7 ± 1.0)	3/29/88 (10.2 ± 0.9)	3/29/88 (10.8 ± 1.0)	3/29/88 (9.63 ± 2.1)	3/29/88 (9.33 ± 1.2)	3/29/88 NC
NBS Concen ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	142 (4.56 ± 0.4)	142 (4.79 ± 0.5)	142 (4.57 ± 0.6)	142 (4.70 ± 0.5)	142 (4.48 ± 0.3)	142 (5.03 ± 0.4)	142 (4.93 ± 0.4)	142 (5.00 ± 0.3)	142 NC
NBS Concen ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC
3rd Analysis Day ppb	206 (4.54 ± 0.4)	206 (5.10 ± 0.4)	206 (4.69 ± 0.4)	206 (4.78 ± 0.7)	206 (4.76 ± 0.4)	206 (5.31 ± 0.3)	206 (5.25 ± 0.3)	206 (5.37 ± 0.3)	206 NC
NBS Concen ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A8 (continued)

	COMPOUND								
Activity	**Bromo-methane**	**Trichloro-fluoro-methane (freon-11)**	**1,1,1-Trichloro-ethane**	**1,2-Dichloro-propane**	**1,2-Dibromo-ethane**	**Toluene**	**Chloro-benzene**	**Ethyl-benzene**	**Ortho-xylene**
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(4.00)	(4.00)	(4.08)	(4.08)	(4.07)	(4.09)	(4.06)	(4.08)	(4.08)
1st Analysis Date ppb	10/23/87 (3.67)	10/23/87 (3.42)	10/23/87 (4.40)	10/23/87 (4.66)	10/23/87 (4.99)	10/23/87 (4.38)	10/23/87 (4.78)	10/23/87 (4.38)	10/23/87 (4.61)
2nd Analysis Date ppb	11/23/87 (2.64)	11/23/87 (3.78)	11/23/87 (3.53)	11/23/87 (4.21)	11/23/87 (5.13)	11/23/87 (4.33)	11/23/87 (4.43)	11/23/87 (4.58)	11/23/87 (4.45)
RTI ANALYSIS*									
1st Analysis Date ppb	3/29/88 (3.83 ± 0.7)	3/29/88 (3.62 ± 0.8)****	3/29/88 (4.14 ± 0.3)	3/29/88 (4.15 ± 0.3)	3/29/88 (4.13 ± 0.5)	3/29/88 (4.29 ± 0.3)	3/29/88 (4.23 ± 0.3)	3/29/88 (3.92 ± 0.3)	3/29/88 (4.19 ± 0.6)
2nd Analysis Day** ppb	142 (3.76 ± 0.4)	142 (3.48 ± 0.6)****	142 (4.15 ± 0.3)	142 (4.13 ± 0.3)	142 (3.93 ± 0.4)	142 (4.20 ± 0.3)	142 (4.14 ± 0.4)	142 (3.78 ± 0.3)	142 (4.14 ± 0.4)
3rd Analysis Day** ppb	206 (3.67 ± 0.3)	206 (3.83 ± 0.5)****	206 (4.24 ± 0.3)	206 (4.23 ± 0.3)	206 (4.09 ± 0.3)	206 (4.37 ± 0.3)	206 (4.42 ± 0.3)	206 (4.02 ± 0.3)	206 (4.04 ± 0.3)
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/29/88 (9.97 ± 0.7)	3/29/88 (9.73 ± 2.3)****	3/29/88 (10.2 ± 0.8)	3/29/88 (10.8 ± 0.7)	3/29/88 (10.6 ± 1.7)	3/29/88 (10.4 ± 1.0)	3/29/88 (10.4 ± 0.6)	3/29/88 (10.9 ± 0.8)	3/29/88 (10.5 ± 1.8)
NBS Concen ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4)	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.2 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day ppb	142 (4.76 ± 0.5)	142 (6.28 ± 1.0)****	142 (5.24 ± 0.3)	142 (5.16 ± 0.3)	142 (4.92 ± 0.4)	142 (5.15 ± 0.3)	142 (5.35 ± 0.3)	142 (5.17 ± 0.3)	142 (4.72 ± 0.3)
NBS Concen ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day ppb	206 (4.78 ± 0.5)	206 (6.71 ± 1.1)****	206 (5.46 ± 0.3)	206 (5.40 ± 0.3)	206 (5.31 ± 0.4)	206 (5.47 ± 0.3)	206 (5.78 ± 0.4)	206 (5.54 ± 0.3)	206 (4.76 ± 0.3)
NBS Concen ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*An NBS primary standard cylinder was used for calibration

**Number of days after RTI 1st analysis

***A different NBS primary standard cylinder was used for quality control

****ECD analysis data

NC = Not calculated due to stability problems.

Stability Study for Group V Compounds
Cylinder No. V-A9

Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
	COMPOUND								
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)	(11.0)
1st Analysis Date ppb	10/27/87 (11.1)	10/27/87 (11.9)	10/27/87 (11.4)	10/27/87 (11.5)	10/27/87 (12.9)	10/27/87 (12.8)	10/27/87 (13.0)	10/27/87 (13.9)	10/27/87 (13.0)
2nd Analysis Date ppb	12/1/87 (11.2)	12/1/87 (13.3)	12/1/87 (10.5)	12/1/87 (12.0)	12/1/87 (13.0)	12/1/87 (13.4)	12/1/87 (12.2)	12/1/87 (12.9)	12/1/87 (12.5)
RTI ANALYSIS*									
1st Analysis Date ppb	3/29/88 (11.2 ± 0.9)	3/29/88 (11.5 ± 1.1)	3/29/88 (11.5 ± 1.5)	3/29/88 (11.9 ± 1.5)	3/29/88 (11.5 ± 1.1)	3/29/88 (11.9 ± 1.0)	3/29/88 (11.8 ± 2.2)	3/29/88 (11.0 ± 0.9)	3/29/88 NC
2nd Analysis Day** ppb	143 (11.1 ± 0.9)	143 (11.2 ± 1.0)	143 (11.2 ± 1.5)	143 (10.3 ± 1.0)	143 (11.3 ± 0.9)	143 (11.6 ± 0.8)	143 (11.3 ± 0.9)	143 (11.6 ± 0.8)	143 NC
3rd Analysis Day** ppb	207 (11.1 ± 0.8)	207 (11.3 ± 0.7)	207 (11.2 ± 0.8)	207 (9.81 ± 1.0)	207 (11.6 ± 0.8)	207 (11.9 ± 0.6)	207 (11.6 ± 0.7)	207 (11.8 ± 0.7)	207 NC
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/29/88 (9.74 ± 0.8)	3/29/88 (10.7 ± 1.1)	3/29/88 (10.9 ± 1.5)	3/29/88 (10.7 ± 1.0)	3/29/88 (10.2 ± 1.0)	3/29/88 (10.3 ± 1.0)	3/29/88 (9.63 ± 2.1)	3/29/88 (9.33 ± 1.2)	3/29/88 NC
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	143 (4.66 ± 0.3)	143 (5.02 ± 0.4)	143 (4.64 ± 0.5)	143 (4.71 ± 0.5)	143 (4.61 ± 0.4)	143 (5.19 ± 0.4)	143 (5.08 ± 0.4)	143 (5.20 ± 0.4)	143 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.10 ± 0.3)	NC
3rd Analysis Day ppb	207 (4.70 ± 0.5)	207 (5.17 ± 0.4)	207 (5.10 ± 0.9)	207 (4.77 ± 0.8)	207 (4.86 ± 0.5)	207 (5.42 ± 0.4)	207 (5.34 ± 0.4)	207 (5.47 ± 0.4)	207 NC
NBS Concen ppb	(4.45 ± 0.3	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A9 (continued)

	COMPOUND								
Activity	Bromo-methane	Trichloro-fluoro-methane (freon-11)	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	Ortho-xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(4.00)	(4.00)	(4.00)	(3.99)	(4.02)	(4.01)	(4.01)	(4.12)	(4.04)
1st Analysis Date ppb	10/27/87 (3.32)	10/27/87 (3.39)	10/27/87 (4.60)	10/27/87 (4.89)	10/27/87 (5.14)	10/27/87 (4.33)	10/27/87 (4.64)	10/27/87 (4.26)	10/27/87 (4.46)
2nd Analysis Date ppb	12/1/87 (3.59)	12/1/87 (3.77)	12/1/87 (4.25)	12/1/87 (4.59)	12/1/87 (4.70)	12/1/87 (4.81)	12/1/87 (4.77)	12/1/87 (4.64)	12/1/87 (4.95)
RTI ANALYSIS*									
1st Analysis Date ppb	3/29/88 (4.06 ± 0.4)	3/29/88 (3.72 ± 0.6)****	3/29/88 (4.16 ± 0.3)	3/29/88 (4.18 ± 0.3)	3/29/88 (4.40 ± 1.8)	3/29/88 (4.37 ± 0.3)	3/29/88 (4.24 ± 0.4)	3/29/88 (4.10 ± 0.3)	3/29/88 (4.26 ± 0.6)
2nd Analysis Day** ppb	143 (4.16 ± 0.5)	143 (3.57 ± 0.6)****	143 (4.22 ± 0.4)	143 (4.14 ± 0.3)	143 (4.06 ± 0.3)	143 (4.25 ± 0.3)	143 (4.13 ± 0.3)	143 (3.89 ± 0.3)	143 (4.21 ± 0.3)
3rd Analysis Day** ppb	207 (4.20 ± 0.5)	207 (3.89 ± 0.5)****	207 (4.24 ± 0.3)	207 (4.21 ± 0.3)	207 (4.32 ± 0.3)	207 (4.35 ± 0.3)	207 (4.34 ± 0.3)	207 (4.08 ± 0.3)	207 (4.61 ± 0.5)
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/29/88 (9.91 ± 0.7)	3/29/88 (9.73 ± 2.3)****	3/29/88 (10.2 ± 0.8)	3/29/88 (10.8 ± 0.7)	3/29/88 (10.6 ± 1.7)	3/29/88 (10.4 ± 1.0)	3/29/88 (10.4 ± 0.6)	3/29/88 (10.9 ± 0.8)	3/29/88 (10.5 ± 1.0)
NBS Concen. ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4)	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.15 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day ppb	143 (4.77 ± 0.5)	143 (6.41 ± 1.0)****	143 (5.39 ± 0.3)	143 (5.32 ± 0.4)	143 (4.99 ± 0.4)	143 (5.32 ± 0.4)	143 (5.44 ± 0.5)	143 (5.28 ± 0.4)	143 (4.78 ± 0.4)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day ppb	207 (4.85 ± 0.5)	207 (6.67 ± 0.8)****	207 (5.49 ± 0.3)	207 (5.44 ± 0.3)	207 (5.31 ± 0.5)	207 (5.49 ± 0.3)	207 (5.81 ± 0.4)	207 (5.59 ± 0.4)	207 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*An NBS primary standard cylinder was used for calibration.
**Number of days after RTI 1st analysis.
***An different NBS primary standard cylinder was used for quality control.
****ECD analysis data.

NC = Not calculated due to stability problems.

Stability Study for Group V Compounds
Cylinder No. V-A10

	COMPOUND								
Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
				MANUFACTURER ANALYSIS					
THEORETICAL ppb	(4.00)	(4.02)	(4.04)	(4.01)	(4.01)	(4.03)	(4.01)	(4.02)	(4.00)
1st Analysis Date ppb	10/26/87 (4.19)	10/26/87 (3.16)	10/26/87 (3.85)	10/26/87 (3.35)	10/26/87 (4.44)	10/26/87 (4.15)	10/26/87 (3.90)	10/26/87 (4.18)	10/26/87 (4.02)
2nd Analysis Date ppb	11/30/87 (4.33)	11/30/87 (3.54)	11/30/87 (3.69)	11/30/87 (4.06)	11/30/87 (4.35)	11/30/87 (4.10)	11/30/87 (4.38)	11/30/87 (4.41)	11/30/87 (3.68)
				RTI ANALYSIS*					
1st Analysis Date ppb	3/31/88 (3.93 ± 0.8)	3/31/88 (3.81 ± 0.3)	3/31/88 (3.88 ± 0.5)	3/31/88 (3.74 ± 0.7)	3/31/88 (4.12 ± 0.7)	3/31/88 (4.24 ± 0.6)	3/31/88 (4.04 ± 0.5)	3/31/88 (4.03 ± 0.4)	3/31/88 NC
2nd Analysis Day** ppb	141 (4.07 ± 0.5)	141 (3.78 ± 0.3)	141 (3.71 ± 0.6)	141 (3.48 ± 0.4)	141 (4.14 ± 0.4)	141 (4.14 ± 0.3)	141 (3.98 ± 0.3)	141 (4.16 ± 0.3)	141 NC
3rd Analysis Day** ppb	205 NA	205 (3.86 ± 0.3)	205 (3.79 ± 0.3)	205 (3.34 ± 0.3)	205 (4.41 ± 0.4)	205 (4.42 ± 0.3)	205 (4.24 ± 0.3)	205 (4.32 ± 0.3)	205 NC
				RTI QUALITY CONTROL***					
1st Analysis Date ppb	3/31/88 (9.90 ± 1.5)	3/31/88 (10.9 ± 1.7)	3/31/88 (11.0 ± 1.3)	3/31/88 (10.8 ± 0.9)	3/31/88 (10.3 ± 0.8)	3/31/88 (10.9 ± 1.3)	3/31/88 (9.71 ± 1.8)	3/31/88 (9.31 ± 1.1)	3/31/88 NC
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	141 (4.66 ± 0.3)	141 (5.02 ± 0.4)	141 (4.64 ± 0.5)	141 (4.71 ± 0.5)	141 (4.61 ± 0.4)	141 (5.19 ± 0.4)	141 (5.08 ± 0.4)	141 (5.20 ± 0.4)	141 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC
3rd Analysis Day ppb	205 (4.70 ± 0.5)	205 (5.17 ± 0.4)	205 (5.10 ± 0.9)	205 (4.77 ± 0.8)	205 (4.86 ± 0.5)	205 (5.42 ± 0.4)	205 (5.34 ± 0.4)	205 (5.47 ± 0.4)	205 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A10 (continued)

	COMPOUND								
Activity	**Bromo-methane**	**Trichloro-fluoro-methane (freon-11)**	**1,1,1-Trichloro-ethane**	**1,2-Dichloro-propane**	**1,2-Dibromo-ethane**	**Toluene**	**Chloro-benzene**	**Ethyl-benzene**	**Ortho-xylene**
					MANUFACTURER ANALYSIS				
THEORETICAL ppb	(8.00)	(8.00)	(8.05)	(8.04)	(8.06)	(8.05)	(8.05)	(8.09)	(8.03)
1st Analysis Date ppb	10/26/87 (7.37)	10/26/87 (7.45)	10/26/87 (8.10)	10/26/87 (8.12)	10/26/87 (8.93)	10/26/87 (8.71)	10/26/87 (9.39)	10/26/87 (8.80)	10/26/87 (9.21)
2nd Analysis Date ppb	11/30/87 (6.28)	11/30/87 (7.30)	11/30/87 (7.39)	11/30/87 (8.39)	11/30/87 (8.18)	11/30/87 (8.44)	11/30/87 (8.76)	11/30/87 (8.44)	11/30/87 (9.09)
					RTI ANALYSIS*				
1st Analysis Date ppb	3/31/88 (8.27 ± 1.3)	3/31/88 (7.78 ± 2.2)****	3/31/88 (7.95 ± 0.9)	3/31/88 (8.02 ± 1.1)	3/31/88 (8.30 ± 1.5)	3/31/88 (8.27 ± 1.7)	3/31/88 (8.22 ± 1.9)	3/31/88 (7.78 ± 1.2)	3/31/88 (8.58 ± 1.6)
2nd Analysis Day** ppb	141 (8.62 ± 0.8)	141 (7.81 ± 1.1)****	141 (8.07 ± 0.5)	141 (7.96 ± 0.5)	141 (7.82 ± 0.6)	141 (8.09 ± 0.5)	141 (7.89 ± 0.5)	141 (7.32 ± 0.4)	141 (8.46 ± 0.5)
3rd Analysis Day** ppb	205 (8.63 ± 0.9)	205 (8.13 ± 1.0)****	205 (8.13 ± 0.5)	205 (8.00 ± 0.6)	205 (8.10 ± 0.6)	205 (8.19 ± 0.5)	205 (8.11 ± 0.7)	205 (7.48 ± 0.6)	205 (7.17 ± 0.6)
					RTI QUALITY CONTROL***				
1st Analysis Date ppb	3/31/88 (10.2 ± 0.7)	3/31/88 (9.53 ± 1.9)****	3/31/88 (10.4 ± 0.8)	3/31/88 (10.9 ± 0.6)	3/31/88 (10.6 ± 2.2)	3/31/88 (10.5 ± 0.8)	3/31/88 (10.4 ± 1.1)	3/31/88 (10.9 ± 0.9)	3/31/88 (10.5 ± 1.5)
NBS Concen. ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.2 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day ppb	141 (4.77 ± 0.5)	141 (6.41 ± 1.0)****	141 (5.39 ± 0.3)	141 (5.32 ± 0.4)	141 (4.99 ± 0.4)	141 (5.32 ± 0.4)	141 (5.44 ± 0.5)	141 (5.28 ± 0.4)	141 (4.78 ± 0.4)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day ppb	205 (4.85 ± 0.5)	205 (6.67 ± 0.8)****	205 (5.49 ± 0.3)	205 (5.44 ± 0.3)	205 (5.31 ± 0.5)	205 (5.49 ± 0.3)	205 (5.81 ± 0.4)	205 (5.59 ± 0.4)	205 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*An NBS primary standard cylinder was used for calibration.
**Number of days after RTI 1st analysis.
***A different NBS primary standard cylinder was used for quality control.
****ECD analysis data.

NA = Not analyzed due to analysis problems.
NC = Not calculated due to stability problems.

Stability Study for Group V Compounds
Cylinder No. V-A11

	COMPOUND								
Activity	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS									
THEORETICAL † ppb	(4.00)	(4.10)	(4.11)	(4.08)	(4.08)	(4.10)	(4.08)	(4.09)	(4.00)
1st Analysis Date ppb	10/27/87 (4.28)	10/27/87 (3.63)	10/27/87 (4.10)	10/27/87 (4.10)	10/27/87 (4.55)	10/27/87 (4.27)	10/27/87 (4.22)	10/27/87 (4.79)	10/27/87 (3.95)
2nd Analysis Date ppb	12/1/87 (4.29)	12/1/87 (4.18)	12/1/87 (3.91)	12/1/87 (3.91)	12/1/87 (4.43)	12/1/87 (4.42)	12/1/87 (4.38)	12/1/87 (4.76)	12/1/87 (4.10)
RTI ANALYSIS*									
1st Analysis Date ppb	3/30/88 (4.00 ± 0.7)	3/30/88 (4.15 ± 0.3)	3/30/88 (4.16 ± 0.4)	3/30/88 (4.33 ± 0.5)	3/30/88 (4.20 ± 0.4)	3/30/88 (4.57 ± 0.4)	3/30/88 (4.30 ± 0.6)	3/30/88 (4.44 ± 1.4)	3/30/88 NC
2nd Analysis Day** ppb	142 (4.20 ± 0.3)	142 (3.94 ± 0.3)	142 (4.00 ± 0.4)	142 (3.68 ± 0.4)	142 (4.06 ± 0.3)	142 (4.24 ± 0.3)	142 (4.15 ± 0.3)	142 (4.20 ± 0.3)	142 NC
3rd Analysis Day** ppb	206 (4.00 ± 0.3)	206 (4.05 ± 0.3)	207 (3.93 ± 0.3)	206 (3.67 ± 0.4)	206 (4.28 ± 0.4)	207 (4.48 ± 0.3)	206 (4.36 ± 0.3)	207 (4.47 ± 0.3)	206 NC
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/30/88 (9.74 ± 0.8)	3/30/88 (10.7 ± 1.1)	3/30/88 (10.9 ± 1.5)	3/30/88 (10.7 ± 1.0)	3/30/88 (10.2 ± 0.9)	3/30/88 (10.8 ± 1.0)	3/30/88 (9.63 ± 2.1)	3/30/88 (9.33 ± 1.2)	3/30/88 NC
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	142 (4.66 ± 0.3)	142 (5.02 ± 0.4)	142 (4.64 ± 0.5)	142 (4.71 ± 0.5)	142 (4.61 ± 0.4)	142 (5.19 ± 0.4)	142 (5.08 ± 0.4)	142 (5.20 ± 0.4)	142 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC
3rd Analysis Day ppb	206 (4.70 ± 0.5)	206 (5.17 ± 0.4)	207 (5.10 ± 0.9)	206 (4.77 ± 0.8)	206 (4.86 ± 0.5)	207 (5.42 ± 0.4)	206 (5.34 ± 0.4)	207 (5.47 ± 0.4)	206 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A11 (continued)

	COMPOUND								
Activity	Bromo-methane	Trichloro-fluoro-methane (freon-11)	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	Ortho-xylene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(8.00)	(8.00)	(8.19)	(8.18)	(8.21)	(8.20)	(8.19)	(8.23)	(8.18)
1st Analysis Date ppb	10/27/87 (7.19)	10/27/87 (7.52)	10/27/87 (8.62)	10/27/87 (9.18)	10/27/87 (8.93)	10/27/87 (9.03)	10/27/87 (9.91)	10/27/87 (9.04)	10/27/87 (9.42)
2nd Analysis Date ppb	12/1/87 (6.77)	12/1/87 (7.35)	12/1/87 (8.10)	12/1/87 (8.74)	12/1/87 (8.30)	12/1/87 (8.91)	12/1/87 (9.54)	12/1/87 (8.79)	12/1/87 (9.32)
RTI ANALYSIS*									
1st Analysis Date ppb	3/30/88 (7.99 ± 1.7)	3/30/88 (7.57 ± 2.0)****	3/30/88 (8.41 ± 0.8)	3/30/88 (8.42 ± 0.7)	3/30/88 (8.61 ± 1.0)	3/30/88 (8.67 ± 0.7)	3/30/88 (8.50 ± 0.8)	3/30/88 (8.18 ± 0.7)	3/30/88 (8.93 ± 1.1)
2nd Analysis Day** ppb	142 (8.31 ± 0.8)	142 (7.83 ± 1.1)****	142 (8.42 ± 0.5)	142 (8.24 ± 0.5)	142 (7.85 ± 0.5)	142 (8.30 ± 0.5)	142 (7.99 ± 0.5)	142 (7.48 ± 0.5)	142 (8.08 ± 0.5)
3rd Analysis Day** ppb	206 (8.33 ± 0.7)	206 (8.38 ± 1.0)****	206 (8.56 ± 0.5)	207 (8.39 ± 0.5)	207 (8.06 ± 0.8)	207 (8.55 ± 0.5)	207 (8.34 ± 0.7)	207 (7.78 ± 0.6)	207 (8.02 ± 0.8)
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/30/88 (9.97 ± 0.7)	3/30/88 (9.73 ± 2.3)****	3/30/88 (10.2 ± 0.8)	3/30/88 (10.8 ± 0.7)	3/30/88 (10.6 ± 1.7)	3/30/88 (10.4 ± 1.0)	3/30/88 (10.4 ± 0.6)	3/30/88 (10.9 ± 0.8)	3/30/88 (10.5 ± 1.8)
NBS Concen. ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4)	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.2 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day ppb	142 (4.77 ± 0.5)	142 (6.41 ± 1.0)****	142 (5.39 ± 0.3)	142 (5.32 ± 0.4)	142 (4.99 ± 0.4)	142 (5.32 ± 0.4)	142 (5.44 ± 0.5)	142 (5.28 ± 0.4)	142 (4.78 ± 0.4)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.09 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day ppb	206 (4.85 ± 0.5)	206 (6.67 ± 0.8)****	206 (5.49 ± 0.3)	207 (5.44 ± 0.3)	207 (5.31 ± 0.5)	207 (5.49 ± 0.3)	207 (5.81 ± 0.4)	207 (5.59 ± 0.4)	207 (4.73 ± 0.3)
NBS Concen. ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*A NBS primary standard cylinder was used for calibration.
**Number of days after RTI 1st analysis.
***A different NBS primary standard cylinder was used for quality control.
****ECD analysis data.

NC = Not calculated due to stability problems.

Stability Study for Group V Compounds
Cylinder No. V-A12 (In Air)

Activity	COMPOUND								
	Vinyl chloride	Chloroform	Carbon tetra-chloride	Methylene chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Perchloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS									
THEORETICAL ppb	(4.00)	(4.07)	(4.08)	(4.05)	(4.09)	(4.07)	(4.06)	(4.07)	(4.00)
1st Analysis Date ppb	10/26/87 (4.00)	10/26/87 (4.20)	10/26/87 (3.96)	10/26/87 (4.04)	10/26/87 (4.87)	10/26/87 (4.37)	10/26/87 (4.32)	10/26/87 (5.14)	10/26/87 (3.73)
2nd Analysis Date ppb	11/25/87 (4.66)	11/25/87 (3.17)	11/25/87 (3.92)	11/25/87 (4.02)	11/25/87 (4.17)	11/25/87 (4.05)	11/25/87 (9.24)	11/25/87 (4.72)	11/25/87 (3.56)
RTI ANALYSIS*									
1st Analysis Date ppb	3/29/88 (4.09 ± 0.7)	3/29/88 (3.86 ± 1.4)	3/29/88 (3.96 ± 1.1)	3/29/88 (4.27 ± 1.4)	3/29/88 (4.02 ± 0.6)	3/29/88 (4.24 ± 0.7)	3/29/88 (4.18 ± 0.9)	3/29/88 (4.51 ± 0.6)	3/29/88 NC
2nd Analysis Day** ppb	143 (4.18 ± 0.4)	143 (3.85 ± 0.3)	143 (3.87 ± 0.4)	143 (3.92 ± 0.5)	143 (4.05 ± 0.3)	143 (4.19 ± 0.3)	143 (4.07 ± 0.3)	143 (4.28 ± 0.3)	143 NC
3rd Analysis Day** ppb	206 (4.03 ± 0.3)	206 3.87 ± 0.3)	206 (3.88 ± 0.3)	206 (4.04 ± 0.4)	206 (4.17 ± 0.3)	206 (4.34 ± 0.3)	206 (4.26 ± 0.3)	206 (4.38 ± 0.3)	206 NC
RTI QUALITY CONTROL***									
1st Analysis Date ppb	3/29/88 (9.74 ± 0.8)	3/29/88 (10.7 ± 1.1)	3/29/88 (10.9 ± 1.5)	3/29/88 (10.7 ± 1.0)	3/29/88 (10.2 ± 0.9)	3/29/88 (10.8 ± 1.0)	3/29/88 (9.63 ± 2.1)	3/29/88 (9.33 ± 1.2)	3/29/88 NC
NBS Concen. ppb	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.7)	(10.7 ± 0.6)	(9.95 ± 0.3)	(10.5 ± 0.4)	(9.36 ± 0.3)	(9.92 ± 0.4)	NC
2nd Analysis Day ppb	143 (4.66 ± 0.3)	143 (5.02 ± 0.4)	143 (4.64 ± 0.5)	143 (4.71 ± 0.5)	143 (4.61 ± 0.4)	143 (5.19 ± 0.4)	143 (5.08 ± 0.4)	143 (5.20 ± 0.4)	143 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC
3rd Analysis Day ppb	206 (4.54 ± 0.4)	206 5.10 ± 0.4)	206 (4.69 ± 0.4)	206 (4.78 ± 0.7)	206 (4.76 ± 0.4)	206 (5.31 ± 0.3)	206 (5.25 ± 0.3)	206 (5.37 ± 0.3)	206 NC
NBS Concen. ppb	(4.45 ± 0.3)	(5.29 ± 0.3)	(4.91 ± 0.3)	(4.80 ± 0.3)	(4.68 ± 0.3)	(5.20 ± 0.3)	(5.08 ± 0.3)	(5.15 ± 0.3)	NC

(continued)

Stability Study for Group V Compounds
Cylinder No. V-A12 (continued)

Activity		Bromo-methane	Trichloro-fluoro-methane (freon-11)	1,1,1-Trichloro-ethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	Ortho-xylene
		COMPOUND								
MANUFACTURER ANALYSIS										
THEORETICAL	ppb	(4.00)	(4.00)	(4.08)	(4.08)	(4.07)	(4.09)	(4.06)	(4.08)	(4.08)
1st Analysis Date	ppb	10/26/87 (3.87)	10/26/87 (3.16)	10/26/87 (4.43)	10/26/87 (4.76)	10/26/87 (4.88)	10/26/87 (4.35)	10/26/87 (4.90)	10/26/87 (4.49)	10/26/87 (4.82)
2nd Analysis Date	ppb	11/25/87 (2.57)	11/25/87 (3.47)	11/25/87 (4.01)	11/25/87 (4.27)	11/25/87 (4.51)	11/25/87 (4.20)	11/25/87 (4.53)	11/25/87 (4.21)	11/25/87 (4.43)
RTI ANALYSIS*										
1st Analysis Date	ppb	3/29/88 (4.12 ± 0.4)	3/29/88 (3.50 ± 2.0)****	3/29/88 (4.05 ± 0.8)	3/29/88 (4.00 ± 0.4)	3/29/88 (4.25 ± 0.4)	3/29/88 (4.30 ± 0.5)	3/29/88 (4.15 ± 0.5)	3/29/88 (3.88 ± 0.3)	3/29/88 (4.27 ± 0.5)
2nd Analysis Day**	ppb	143 (4.24 ± 0.5)	143 (3.23 ± 0.4)****	143 (4.11 ± 0.3)	143 (4.04 ± 0.3)	143 (4.03 ± 0.3)	143 (4.13 ± 0.3)	143 (4.06 ± 0.3)	143 (3.74 ± 0.3)	143 (4.08 ± 0.3)
3rd Analysis Day**	ppb	206 (4.32 ± 0.4)	206 (3.73 ± 0.4)****	206 (4.20 ± 0.3)	206 (4.15 ± 0.3)	206 (4.37 ± 0.3)	206 (4.30 ± 0.3)	206 (4.34 ± 0.3)	206 (3.94 ± 0.3)	206 (4.18 ± 0.3)
RTI QUALITY CONTROL***										
1st Analysis Date	ppb	3/29/88 (9.97 ± 0.7)	3/29/88 (9.73 ± 2.3)****	3/29/88 (10.2 ± 0.8)	3/29/88 (10.8 ± 0.7)	3/29/88 (10.6 ± 1.7)	3/29/88 (10.4 ± 1.0)	3/29/88 (10.4 ± 0.6)	3/29/88 (10.9 ± 0.8)	3/29/88 (10.5 ± 1.8)
NBS Concen.	ppb	(10.1 ± 0.4)	(9.39 ± 0.9)	(10.2 ± 0.4)	(10.7 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.4)	(9.80 ± 0.4)	(10.2 ± 0.4)	(9.96 ± 0.5)
2nd Analysis Day	ppb	143 (4.77 ± 0.5)	143 (6.41 ± 1.0****	143 (5.39 ± 0.3)	143 (5.32 ± 0.4)	143 (4.99 ± 0.4)	143 (5.32 ± 0.4)	143 (5.44 ± 0.5)	143 (5.28 ± 0.4)	143 (4.78 ± 0.4)
NBS Concen.	ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)
3rd Analysis Day	ppb	206 (4.87 ± 0.5)	206 (6.71 ± 1.1)****	206 (5.46 ± 0.3)	206 (5.40 ± 0.3)	206 (5.31 ± 0.4)	206 (5.47 ± 0.3)	206 (5.78 ± 0.4)	206 (5.54 ± 0.3)	206 (4.76 ± 0.3)
NBS Concen	ppb	(4.80 ± 0.4)	(6.15 ± 0.6)	(5.24 ± 0.3)	(5.27 ± 0.3)	(5.10 ± 0.3)	(5.09 ± 0.3)	(5.47 ± 0.3)	(5.29 ± 0.3)	(4.76 ± 0.3)

*A NBS primary standard cylinder was used for calibration

**Number of days after RTI 1st analysis.

***A different NBS primary standard cylinder was used for quality control.

****ECD analysis data.

NC = Not calculated due to stability problems.

APPENDIX B
AUDIT INSTRUCTIONS

MEMORANDUM

To: Date:

From: Shonna Tompkins, RTI

This suitcase kit is provided in conjunction with audit gas cylinder(s) which are arriving simultaneously via Overnite Transportation Company.

A letter accompanying the audit cylinder(s) describes their purpose and origin.

The audit gas from the cylinder running through the kit's manifold simulates the ambient emission from the stack through your probe. Follow instructions attached to use the kit materials for your audit.

Please return the suitcase **in its shipping box**, at your cost, through United Parcel Service (UPS). I have included an address label for the outside of the box.

Insure the suitcase kit for $1000 (only a $2.25 charge).

Thank you!

VOST AUDIT KIT INVENTORY

QTY	DESCRIPTION
1	GLASS MANIFOLD with Teflon nut and ferrule on one end
1	HEATING TAPE (wrapped around manifold)
1	1/8" TEFLON TUBING (about 3 feet) with: 1/4 to 1/8" brass Swagelock™ union, one end 1/4" brass Swagelock nut, other end
1	REGULATOR, 2 stage, high purity, 350 GCA fitting, with female connector
1	3/8" TEFLON TUBING, "SHORT" with: 3/8" brass Swagelock nut
1	ROTAMETER, 3/8" Swagelock female connectors on both ends
1	3/8" TEFLON TUBING, "LONG" with: 3/8" brass Swagelock nut
1	THERMOMETER, DIAL FACE, 8", 0-150°C
2	TWO-PRONG EXTENSION CLAMPS, 8"
2	RIGHT-ANGLE CLAMP HOLDERS, aluminum thumbscrew type
1	BASE SUPPORT, 4" x 6"
1	ROD FOR BASE SUPPORT, 5/16" diameter, 18" long
1	CYLINDER CLAMP SUPPORT WITH NYLON STRAP
1	HEATER CONTROLLER, for connection to heating tape
1	INSTRUCTION SHEET

Please notify me at once if an item is missing or defective.

Thank you for CAREFULLY repackaging all items.

Shonna Tompkins
(919) 541-7023

INSTRUCTIONS FOR USE OF VOST AUDIT KIT

1. Assemble the support stand (base and rod). Using the clamps supplied, secure the manifold and rotameter vertically to the stand. The **larger** end of the manifold should be **temporarily** up, so the thermometer can be inserted.

2. Connect the heating controller to the tape and adjust the dial to heat the manifold to approximately 100°C.

   On assemblies with 1" tape (closely wrapped), a setting of 5 is sufficient to attain 100°C.

   On assemblies with 1/2" tape (loosely wrapped), a setting of 7-1/2 is required.

3. After the manifold temperature has become stable, remove the thermometer, invert the manifold (larger end down) and attach the shorter 3/8" OD tubing by sliding the end sleeve-wise over the glass.

4. Attach the 1/8" tubing (union end) to the Teflon nut on the top of the manifold. The 3/8" Swagelock nut-end connects to the regulator at the reduced-end fitting.

5. Consult diagram for attaching rotameter, longer exhaust tubing, and audit cylinder.

6. Adjust the regulator to start the gas flow. The audit kit-supplied rotameter is downstream of the manifold and is used to monitor **excess** gas flow.

7. The rotameter will present negligible back pressure to the manifold. ΔP for 5 L/min is 1 inch of water column.

8. After sampling is completed, allow the manifold to cool, disassemble and repackage the audit kit into the case. Remember to include the teflon nut on the end of the manifold. The tubing can lie flat on top of the repackaged kit, loosely coiled.

9. Ship the case inside the box it came in, by United Parcel Service (UPS).

INSTRUCTION SET NO. 1

INSTRUCTIONS FOR THE SAMPLING AND ANALYSIS OF VOLATILE POHC FROM QUALITY ASSURANCE AUDIT CYLINDERS USING THE BAG TECHNIQUE

1.0 PURPOSE

This audit is intended to assess and document the accuracy and precision of the principle organic hazardous constituents (POHC) using the bag technique during trial burns at hazardous waste burning facilities. This audit also can be used to determine the proficiency of source testing organization prior to the actual trial burn tests.

2.0 PRINCIPLE

A gas sample containing POHC is drawn from an audit gas cylinder into a bag. The collected POHC are analyzed by gas chromatography according to the method specifications and procedures.

3.0 AUDIT MATERIAL (GAS CYLINDERS)

The audit material is contained in gas cylinders. A maximum of 5 L of audit gas is to be used for each test run. A two-stage gas regulator, 1/4-inch male/female glass joints, and Teflon tubing are supplied for use with the gas cylinder.

4.0 PROCEDURES

The following step-by-step procedures should be used for sample collection and analysis using the bag technique.

Step A. Evacuate the bag with a vacuum pump and fill the bag with approximately 5 L of organic-free nitrogen from a gas cylinder. Tedlar bags are recommended. Determine the hazardous constituents of interest by gas chromatography. Report the concentrations determined as Blank Value 1. The blank value must be not more than twice the detection limit. If it is higher, the bag cleaning procedure should be repeated.

Step B. After the blank analysis, evacuate the bag with a vacuum pump and fill the bag with approximately 5 L of audit gas from the audit cylinder. The 1/4-inch male/female glass joints that are supplied should be used as connections to the bag and the audit cylinder. Minimum Teflon tubing should be used. Determine the POHC of interest by gas chromatography. Report the concentrations of each constituent as Analysis Result 1.

Step C. Evacuate the bag contents and fill the bag with organic free nitrogen (Cleaning Step 1). After 3 minutes, evacuate the bag contents and fill the bag again with nitrogen (Cleaning Step 2). After three minutes, repeat the evacuation procedure and fill the bag with 5 L of nitrogen (Blank 2). Determine the concentration of the bag contents by gas chromatography and report the measured concentration as Blank Value 2. The blank value must not be more than twice the detection limit. If it is higher, the bag cleaning procedure should be repeated.

Step D. Evacuate the bag contents and fill the bag with approximately 5 L of audit gas from the audit cylinder. Determine the POHC of interest by gas chromatography. Report the concentrations determined as Analysis Result 2.

Step E. Repeat Step C and report the measured concentration of the bag contents as Blank Value 3. The blank value must not be more than twice the detection limit. If it is higher, the bag cleaning procedures should be repeated.

Step F. Evacuate the bag contents and fill the bag with approximately 5 L of audit gas from the audit cylinder. Determine the POHC of interest by gas chromatography. Report the concentrations determined as Analysis Result 3.

5.0 SAMPLE ANALYSIS

Follow the procedures described in the method used for sample analysis, calibration, and calculations. Submit the results to the Project Officer and to the audit supervisor for evaluation.

INSTRUCTION SET NO. 3

INSTRUCTIONS FOR THE SAMPLING AND ANALYSIS OF VOLATILE POHC FROM QUALITY ASSURANCE AUDIT CYLINDERS USING THE VOLATILE ORGANIC SAMPLING TRAIN

1.0 PURPOSE

This audit is intended to assess and document the accuracy and precision of the volatile organic sampling train (VOST) when used during trial burns at hazardous waste burning facilities. This audit also can be used to determine the proficiency of source testing organization prior to the actual trial burn tests.

2.0 PRINCIPLE

A gas sample containing principal organic hazardous constituents (POHC) is passed from an audit gas cylinder into a glass manifold and is used in place of the test site stack sample. While the POHC gas is being passed into the glass manifold, a major portion of the gas is drawn through a VOST according to the method specifications and procedures. The collected POHC are analyzed by thermal desorption, purge and trap, and gas chromatography/mass spectrometry (GC/MS) or an equivalent method approved by the EPA.

3.0 APPARATUS

3.1 GLASS MANIFOLD

A glass manifold is supplied. One side of the glass manifold is connected with Teflon tubing to the audit cylinder. The other end of the glass manifold should be connected with Teflon tubing to a rotameter and the excess gas from the rotameter should be vented into a hood. The glass manifold is heated to 100°C with heating tape. The heating tape, rotameter, 1/4-inch male/female glass joints, and Teflon tubing are also supplied. One port of the glass manifold should be connected to the VOST probe with 1/4-inch male/female glass joints. A schematic diagram of the glass manifold is shown in Figure 1.

3.2 VOST COMPONENTS

The sampling train component parts, except for the glass manifold, are the same as those used for VOST.

3.3 ANALYSIS

Refer to the method specifications and procedures for the VOST method.

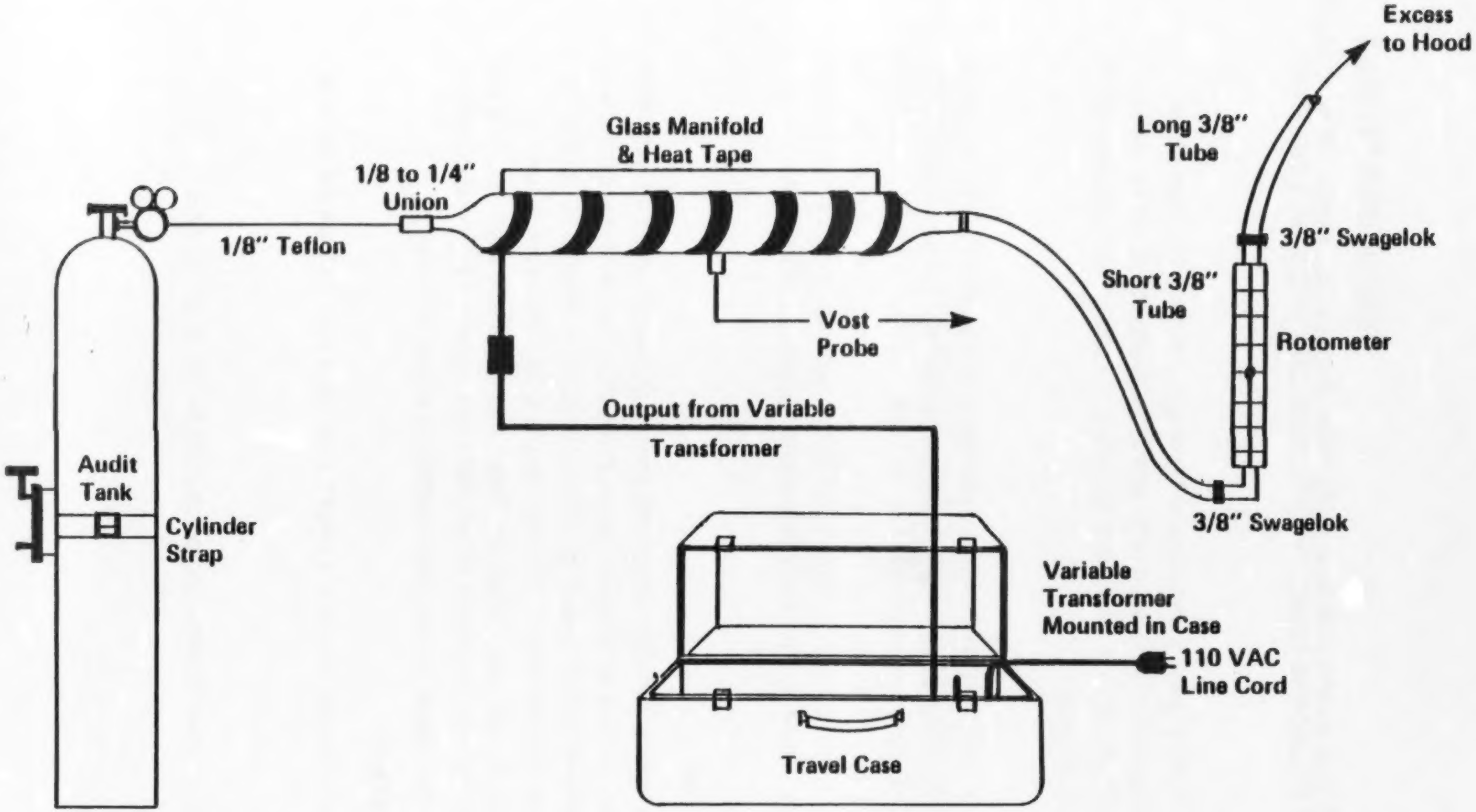
Audit
Tank
Cylinder
Strap
1/8" Teflon
1/8 to 1/4"
Union
Glass Manifold
& Heat Tape
Vost
Probe
Output from Variable
Transformer
Travel Case
Variable
Transformer
Mounted in Case
110 VAC
Line Cord
Short 3/8"
Tube
3/8" Swagelok
Rotometer
3/8" Swagelok
Long 3/8"
Tube
Excess
to Hood

Figure 1. Schematic diagram of audit material delivery system.

4.0 AUDIT MATERIAL (GAS CYLINDERS)

The audit material is supplied in gas cylinders. A maximum of 50 L of gas is to be used for each test run. A two-stage gas regulator is supplied for use with the gas cylinder.

5.0 PROCEDURES

5.1 SAMPLING

5.1.1 Preparation of VOST

All train components should be cleaned and assembled as described in the VOST method used.

5.1.2 Leak-Check Procedure

Before the sampling run, the train is leak-checked as described in the VOST method. During sampling, all connections should be visually examined.

5.1.3 Sample Generation

The gas sample from the audit cylinder is passed through the glass manifold at a flow rate of 2 L/min for 3 minutes to condition the glass system. A glass rotameter is supplied to measure the flow rate at the end of the glass manifold. The VOST probe then should be connected to one port of the glass manifold with 1/4 inch male/female joints and the probe should be purged with audit gas for an additional 2 minutes so that the probe is purged of ambient air before initiation of sample collection. This can be accomplished either by attaching a pump to a three-way stop-cock above the first condenser and drawing audit gas through the probe via the three-way stop-cock or by any other suitable method.

5.2 SAMPLE COLLECTION

After leak-checking and conditioning the glass probe, sample collection is accomplished by opening the valve at the inlet to the first condenser, turning on the pump and sampling at a rate of 0.5 L/min for 20 minutes or 1 L/min for 10 minutes. The sampling rate is measured with the rotameter which is part of the VOST. The volume of sample for any pair of the traps should not exceed 10 L. The temperature of the gas stream at the inlet to the first sorbent cartridge must be maintained at 20°C during sample collection.

After the collection of 10 L of sample, the train is leak-tested using the procedures described in the method used. If leak-test criteria as described in the method are not met, the samples should not be analyzed. If leak-test criteria are met, the train is returned to atmospheric pressure, the two sorbent cartridges are removed, the end caps are replaced, and analysis of cartridges is performed.

Repeat the sample collection procedure two more times with two new pairs of sample cartridges in the VOST, collect 10 L of sample each time, and perform the analysis.

5.3 SAMPLE ANALYSIS

Follow the procedures described in the method for sample analysis, calibration, and calculations. Report the amount of each constituent in the three samples and the blank values to the Project Officer and the audit supervisor for evaluation.